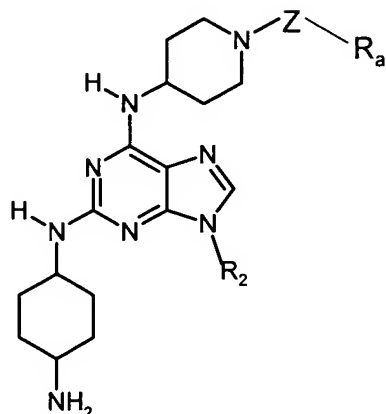


What is claimed is:

1. A compound according to the formula (I)



(I)

wherein

Z is selected from the group consisting of -S(O)₂- and -C(O)-,

when Z is -S(O)₂-, R_a is selected from the group consisting of -R₁ and -N(R₁)(R₃), or

when Z is -C(O)-, R_a is selected from the group consisting of -R₁, -OR₁, -N(R₁)(R₃) and -SR₁,

where

R₁ is selected from the group consisting of

-C₁-C₁₁ alkyl, wherein each carbon may be optionally substituted with one, two or three X substituents,

-C₃-C₁₀ cycloalkyl, wherein each carbon may be optionally substituted with one or two X substituents,

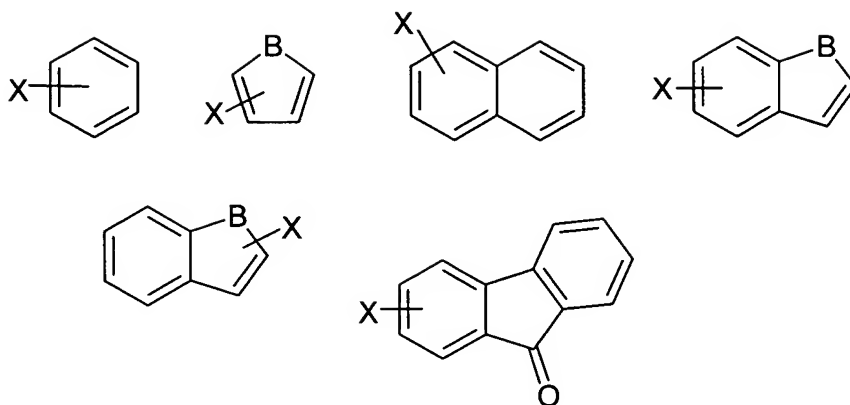
-(CH₂)_nQ_p(CH₂)_nW, wherein each carbon of -(CH₂)_n- may be optionally substituted with one or two X substituents,

Q is O, S, or NR₃,

n is independently an integer 0-6,

p is independently an integer 0 or 1,

W is independently selected from the group consisting of hydrogen, C₃-C₁₀ cycloalkyl, -(C₃-C₁₀ cycloalkyl)-aromatic, and one of the following aromatic or heteroaromatic rings:



where B is -O-, -S-, -NR₆-, where each carbon of the aromatic or heteroaromatic ring may be independently substituted by a nitrogen atom, and each carbon of the aromatic ring may be independently substituted with an X substituent;

and -(CH₂)_nCHW₂,

where each X substituent is independently selected from the group consisting of hydrogen, halogen, methylenedioxy, -C₁-C₈ alkyl, -C₃-C₁₀ cycloalkyl, substituted or unsubstituted phenyl, -C₁-C₈ alkoxy, -SR₃, -OH, =O, -CY₃, -OCY₃, -CO₂R₃, -CN, -CO-NR₄R₅, -NO₂, -COR₃, -NR₄R₅, -NH-C(O)-R₃, -NH-C(O)-(C₁-C₆ alkyl)-aromatic, and -NH-C(O)-(C₁-C₆ alkyl)-heteroaromatic;

where each Y is independently selected from the group consisting of hydrogen and halogen;

where each R₃ is independently selected from the group consisting of hydrogen, and C₁-C₈ alkyl, where C₁-C₈ alkyl may be straight or branched, saturated or unsaturated;

where each R₄ and R₅ is independently selected from the group consisting of hydrogen, and C₁-C₆ alkyl, where C₁-C₆ alkyl may be straight or branched, saturated or unsaturated, where which each carbon of C₁-C₆ alkyl is optionally substituted with an X substituent, or where R₄ and R₅ taken together with the

nitrogen to which they are attached, form a heterocyclic ring of three to seven atoms including the nitrogen atom;

where -NR6- is selected from the group consisting of an unsubstituted N, an N substituted with -hydrogen, -(C₁-C₆ alkyl), -C₃-C₁₀ cycloalkyl, -S(O)₂-(C₁-C₆ alkyl), -S(O)₂-(C₃-C₁₀ cycloalkyl), -C(O)R₃, -C(O)-(C₀-C₆ alkyl)-aromatic, and -S(O)₂-(C₀-C₆ alkyl)-aromatic, wherein each carbon of the aromatic ring may be optionally substituted with an X substituent; and

where phenyl is substituted with one to five substituents independently selected from the group consisting of hydrogen, halogen, methylenedioxy, -C₁-C₈ alkyl, -C₃-C₁₀ cycloalkyl, -C₁-C₈ alkoxy, -OH, -CY₃, -OCY₃, -CO₂R₃, -CN, -NO₂, -COR₃, -NR₄R₅, -SR₃, -CO-NR₄R₅, and -NH-C(O)-R₃; and

R₂ is selected from the group consisting of cyclopentyl, cyclopentenyl, and isopropyl;

or

a pharmaceutically acceptable salt, optical isomer, solvate or hydrate thereof.

2. The compound according to claim 1, wherein the compound is:

trans-1-{4-[2-(4-Amino-cyclohexylamino)-9-cyclopentyl-9H-purin-6-ylamino]-piperidin-1-yl}-1-(4-fluoro-phenyl)-methanone dihydrochloride;

trans-1-{4-[2-(4-Amino-cyclohexylamino)-9-cyclopentyl-9H-purin-6-ylamino]-piperidin-1-yl}-1-(4-trifluoromethyl-phenyl)-methanone dihydrochloride;

trans-1-{4-[2-(4-Amino-cyclohexylamino)-9-cyclopentyl-9H-purin-6-ylamino]-piperidin-1-yl}-1-(4-trifluoromethyl-phenyl)-methanone dihydrochloride;

trans-1-{4-[2-(4-Amino-cyclohexylamino)-9-cyclopentyl-9H-purin-6-ylamino]-piperidin-1-yl}-1-quinoxalin-2-yl-methanone dihydrochloride;

trans-1-{4-[2-(4-Amino-cyclohexylamino)-9-cyclopentyl-9H-purin-6-ylamino]-piperidin-1-yl}-1-benzo[1,3]dioxol-5-yl-methanone dihydrochloride;

trans-1-{4-[2-(4-Amino-cyclohexylamino)-9-cyclopentyl-9H-purin-6-ylamino]-piperidin-1-yl}-1-(3-chloro-phenyl)-methanone dihydrochloride;

trans-1-{4-[2-(4-Amino-cyclohexylamino)-9-cyclopentyl-9H-purin-6-ylamino]-piperidin-1-yl}-1-(2-methoxy-phenyl)-methanone dihydrochloride;

trans-1-{4-[2-(4-Amino-cyclohexylamino)-9-cyclopentyl-9H-purin-6-ylamino]-piperidin-1-yl}-1-(4-methoxy-phenyl)-methanone dihydrochloride;

trans-1-{4-[2-(4-Amino-cyclohexylamino)-9-cyclopentyl-9H-purin-6-ylamino]-piperidin-1-yl}-1-phenyl-methanone dihydrochloride;

trans-1-{4-[2-(4-Amino-cyclohexylamino)-9-cyclopentyl-9H-purin-6-ylamino]-piperidin-1-yl}-1-thiophen-2-yl-methanone dihydrochloride;

trans-4-(1-{4-[2-(4-Amino-cyclohexylamino)-9-cyclopentyl-9H-purin-6-ylamino]-piperidin-1-yl}-methanoyl)-benzoic acid methyl ester dihydrochloride;

trans-1-{4-[2-(4-Amino-cyclohexylamino)-9-cyclopentyl-9H-purin-6-ylamino]-piperidin-1-yl}-1-(2-fluoro-3-trifluoromethyl-phenyl)-methanone dihydrochloride;

trans-1-{4-[2-(4-Amino-cyclohexylamino)-9-cyclopentyl-9H-purin-6-ylamino]-piperidin-1-yl}-1-(2-bromo-phenyl)-methanone;

trans-1-{4-[2-(4-Amino-cyclohexylamino)-9-cyclopentyl-9H-purin-6-ylamino]-piperidin-1-yl}-1-(2,6-dichloro-phenyl)-methanone;

trans-1-{4-[2-(4-Amino-cyclohexylamino)-9-cyclopentyl-9H-purin-6-ylamino]-piperidin-1-yl}-1-(3,4-dichloro-phenyl)-methanone;

trans-1-{4-[2-(4-Amino-cyclohexylamino)-9-cyclopentyl-9H-purin-6-ylamino]-piperidin-1-yl}-1-(3,4,5-trimethoxy-phenyl)-methanone;

trans-1-{4-[2-(4-Amino-cyclohexylamino)-9-cyclopentyl-9H-purin-6-ylamino]-piperidin-1-yl}-1-(3,5-dimethoxy-phenyl)-methanone;

trans-1-{4-[2-(4-Amino-cyclohexylamino)-9-cyclopentyl-9H-purin-6-ylamino]-piperidin-1-yl}-1-(4-butoxy-phenyl)-methanone;

trans-1-{4-[2-(4-Amino-cyclohexylamino)-9-cyclopentyl-9H-purin-6-ylamino]-piperidin-1-yl}-1-(4-heptoxy-phenyl)-methanone;

trans-1-{4-[2-(4-Amino-cyclohexylamino)-9-cyclopentyl-9H-purin-6-ylamino]-piperidin-1-yl}-1-(4-tert-butyl-phenyl)-methanone;

trans-1-{4-[2-(4-Amino-cyclohexylamino)-9-cyclopentyl-9H-purin-6-ylamino]-piperidin-1-yl}-1-(4-butyl-phenyl)-methanone;

trans-1-{4-[2-(4-Amino-cyclohexylamino)-9-cyclopentyl-9H-purin-6-ylamino]-piperidin-1-yl}-1-(4-pentyl-phenyl)-methanone;

trans-1-{4-[2-(4-Amino-cyclohexylamino)-9-cyclopentyl-9H-purin-6-ylamino]-piperidin-1-yl}-1-(4-hexyl-phenyl)-methanone;

trans-1-{4-[2-(4-Amino-cyclohexylamino)-9-cyclopentyl-9H-purin-6-ylamino]-piperidin-1-yl}-1-(4-heptyl-phenyl)-methanone;

trans-1-{4-[2-(4-Amino-cyclohexylamino)-9-cyclopentyl-9H-purin-6-ylamino]-piperidin-1-yl}-1-(4-cyano-phenyl)-methanone;

trans-1-{4-[2-(4-Amino-cyclohexylamino)-9-cyclopentyl-9H-purin-6-ylamino]-piperidin-1-yl}-1-(3-nitro-phenyl)-methanone;

trans-1-{4-[2-(4-Amino-cyclohexylamino)-9-cyclopentyl-9H-purin-6-ylamino]-piperidin-1-yl}-1-(4-nitro-phenyl)-methanone;

trans-1-{4-[2-(4-Amino-cyclohexylamino)-9-cyclopentyl-9H-purin-6-ylamino]-piperidin-1-yl}-2-phenoxy-ethanone dihydrochloride;

trans-3-{4-[2-(4-Amino-cyclohexylamino)-9-cyclopentyl-9H-purin-6-ylamino]-piperidin-1-yl}-3-oxo-propionic acid ethyl ester dihydrochloride;

trans 1-{4-[2-(4-Amino-cyclohexylamino)-9-cyclopentyl-9H-purin-6-ylamino]-piperidin-1-yl}-3-methyl-but-2-en-1-one dihydrochloride;

trans-1-{4-[2-(4-Amino-cyclohexylamino)-9-cyclopentyl-9H-purin-6-ylamino]-piperidin-1-yl}-2-(4-chloro-phenoxy)-ethanone dihydrochloride;

trans 1-{4-[2-(4-Amino-cyclohexylamino)-9-cyclopentyl-9H-purin-6-ylamino]-piperidin-1-yl}-2-(3,4-dimethoxy-phenyl)-ethanone dihydrochloride;

trans 1-{4-[2-(4-Amino-cyclohexylamino)-9-cyclopentyl-9H-purin-6-ylamino]-piperidin-1-yl}-3-phenyl-propan-1-one dihydrochloride;

trans 1-{4-[2-(4-Amino-cyclohexylamino)-9-cyclopentyl-9H-purin-6-ylamino]-piperidin-1-yl}-3-(2,5-dimethoxy-phenyl)-propan-1-one dihydrochloride;

trans (E)-1-{4-[2-(4-Amino-cyclohexylamino)-9-cyclopentyl-9H-purin-6-ylamino]-piperidin-1-yl}-but-2-en-1-one dihydrochloride;

trans-1-{4-[2-(4-Amino-cyclohexylamino)-9-cyclopentyl-9H-purin-6-ylamino]-piperidin-1-yl}-3-cyclopentyl-propan-1-one dihydrochloride;

trans-1-{4-[2-(4-Amino-cyclohexylamino)-9-cyclopentyl-9H-purin-6-ylamino]-piperidin-1-yl}-2-benzyloxy-ethanone dihydrochloride;

trans-1-{4-[2-(4-Amino-cyclohexylamino)-9-cyclopentyl-9H-purin-6-ylamino]-piperidin-1-yl}-2-(3-methoxy-phenyl)-ethanone dihydrochloride;

trans 1-{4-[2-(4-Amino-cyclohexylamino)-9-cyclopentyl-9H-purin-6-ylamino]-piperidin-1-yl}-1-cyclopentyl-methanone;

trans-1-{4-[2-(4-Amino-cyclohexylamino)-9-cyclopentyl-9H-purin-6-ylamino]-piperidin-1-yl}-2,2-diphenyl-ethanone dihydrochloride;

trans-1-{4-[2-(4-Amino-cyclohexylamino)-9-cyclopentyl-9H-purin-6-ylamino]-piperidin-1-yl}-2-phenyl-butan-1-one dihydrochloride;

trans-1-{4-[2-(4-Amino-cyclohexylamino)-9-cyclopentyl-9H-purin-6-ylamino]-piperidin-1-yl}-2-(4-methoxy-phenyl)-ethanone dihydrochloride;

(±)-trans-1-{4-[2-(4-Amino-cyclohexylamino)-9-cyclopentyl-9H-purin-6-ylamino]-piperidin-1-yl}-1-(2-phenyl-cyclopropyl)-methanone dihydrochloride;

trans-(E)-1-{4-[2-(4-Amino-cyclohexylamino)-9-cyclopentyl-9H-purin-6-ylamino]-piperidin-1-yl}-3-(3-trifluoromethyl-phenyl)-propenone dihydrochloride;

(±)-trans-1-{4-[2-(4-Amino-cyclohexylamino)-9-cyclopentyl-9H-purin-6-ylamino]-piperidin-1-yl}-3,5,5-trimethyl-hexan-1-one dihydrochloride;

trans-1-{4-[2-(4-Amino-cyclohexylamino)-9-cyclopentyl-9H-purin-6-ylamino]-piperidin-1-yl}-2-phenylsulfanyl-ethanone dihydrochloride;

trans-(S)-1-{4-[2-(4-Amino-cyclohexylamino)-9-cyclopentyl-9H-purin-6-ylamino]-piperidin-1-yl}-2-hydroxy-propan-1-one dihydrochloride;

trans-1-{4-[2-(4-Amino-cyclohexylamino)-9-cyclopentyl-9H-purin-6-ylamino]-piperidin-1-yl}-2-(4-fluoro-phenyl)-ethanone dihydrochloride;

trans-1-{4-[2-(4-Amino-cyclohexylamino)-9-cyclopentyl-9H-purin-6-ylamino]-piperidin-1-yl}-pent-4-en-1-one dihydrochloride;

(±)-trans-1-{4-[2-(4-Amino-cyclohexylamino)-9-cyclopentyl-9H-purin-6-ylamino]-piperidin-1-yl}-2-hydroxy-2-phenyl-ethanone dihydrochloride;

trans-1-{4-[2-(4-Amino-cyclohexylamino)-9-cyclopentyl-9H-purin-6-ylamino]-piperidin-1-yl}-3,3-dimethyl-butan-1-one dihydrochloride;

trans-1-{4-[2-(4-Amino-cyclohexylamino)-9-cyclopentyl-9H-purin-6-ylamino]-piperidin-1-yl}-2-phenyl-ethanone dihydrochloride;

trans-1-{4-[2-(4-Amino-cyclohexylamino)-9-cyclopentyl-9H-purin-6-ylamino]-piperidin-1-yl}-propan-1-one dihydrochloride;

trans-1-{4-[2-(4-Amino-cyclohexylamino)-9-cyclopentyl-9H-purin-6-ylamino]-piperidin-1-yl}-hexan-1-one dihydrochloride;

trans-1-{4-[2-(4-Amino-cyclohexylamino)-9-cyclopentyl-9H-purin-6-ylamino]-piperidin-1-yl}-1-cyclohexyl-methanone dihydrochloride;

trans-1-{4-[2-(4-Amino-cyclohexylamino)-9-cyclopentyl-9H-purin-6-ylamino]-piperidin-1-yl}-pentan-1-one dihydrochloride;

(±)-trans-1-{4-[2-(4-Amino-cyclohexylamino)-9-cyclopentyl-9H-purin-6-ylamino]-piperidin-1-yl}-2-ethyl-hexan-1-one dihydrochloride;

trans-1-{4-[2-(4-Amino-cyclohexylamino)-9-cyclopentyl-9H-purin-6-ylamino]-piperidin-1-yl}-butan-1-one dihydrochloride;

trans-1-{4-[2-(4-Amino-cyclohexylamino)-9-cyclopentyl-9H-purin-6-ylamino]-piperidin-1-yl}-2-methyl-propan-1-one dihydrochloride;

trans-1-{4-[2-(4-Amino-cyclohexylamino)-9-cyclopentyl-9H-purin-6-ylamino]-piperidin-1-yl}-3-methyl-butan-1-one dihydrochloride;

trans-1-{4-[2-(4-Amino-cyclohexylamino)-9-cyclopentyl-9H-purin-6-ylamino]-piperidin-1-yl}-2-thiophen-2-yl-ethanone dihydrochloride;

trans-(E)-1-{4-[2-(4-Amino-cyclohexylamino)-9-cyclopentyl-9H-purin-6-ylamino]-piperidin-1-yl}-3-phenyl-propenone dihydrochloride;

trans-1-{4-[2-(4-Amino-cyclohexylamino)-9-cyclopentyl-9H-purin-6-ylamino]-piperidin-1-yl}-1-cyclobutyl-methanone dihydrochloride;

trans-1-{4-[2-(4-Amino-cyclohexylamino)-9-cyclopentyl-9H-purin-6-ylamino]-piperidin-1-yl}-1-cyclopropyl-methanone dihydrochloride;

trans-1-{4-[2-(4-Amino-cyclohexylamino)-9-cyclopentyl-9H-purin-6-ylamino]-piperidin-1-yl}-2-methoxy-ethanone dihydrochloride;

trans-4-(1-{4-[2-(4-Amino-cyclohexylamino)-9-cyclopentyl-9H-purin-6-ylamino]-piperidin-1-yl}-methanoyl)-fluoren-9-one;

trans-1-{4-[2-(4-Amino-cyclohexylamino)-9-cyclopentyl-9H-purin-6-ylamino]-piperidin-1-yl}-1-pyridin-3-yl-methanone;

trans-1-{4-[2-(4-Amino-cyclohexylamino)-9-cyclopentyl-9H-purin-6-ylamino]-piperidin-1-yl}-1-pyridin-4-yl-methanone;

trans-1-{4-[2-(4-Amino-cyclohexylamino)-9-cyclopentyl-9H-purin-6-ylamino]-piperidin-1-yl}-1-(2-fluoro-5-trifluoromethyl-phenyl)-methanone;

trans-1-{4-[2-(4-Amino-cyclohexylamino)-9-cyclopentyl-9H-purin-6-ylamino]-piperidin-1-yl}-1-(2-methyl-phenyl)-methanone;

trans-1-{4-[2-(4-Amino-cyclohexylamino)-9-cyclopentyl-9H-purin-6-ylamino]-piperidin-1-yl}-1-(3-bromo-phenyl)-methanone;

trans-1-{4-[2-(4-Amino-cyclohexylamino)-9-cyclopentyl-9H-purin-6-ylamino]-piperidin-1-yl}-1-(3-chloro-phenyl)-methanone;

trans-1-{4-[2-(4-Amino-cyclohexylamino)-9-cyclopentyl-9H-purin-6-ylamino]-piperidin-1-yl}-1-(3-methyl-phenyl)-methanone;

trans-1-{4-[2-(4-Amino-cyclohexylamino)-9-cyclopentyl-9H-purin-6-ylamino]-piperidin-1-yl}-1-(4-bromo-phenyl)-methanone;

trans-1-{4-[2-(4-Amino-cyclohexylamino)-9-cyclopentyl-9H-purin-6-ylamino]-piperidin-1-yl}-1-(4-chloro-phenyl)-methanone;

trans-1-{4-[2-(4-Amino-cyclohexylamino)-9-cyclopentyl-9H-purin-6-ylamino]-piperidin-1-yl}-1-(4-iodo-phenyl)-methanone;

trans-1-{4-[2-(4-Amino-cyclohexylamino)-9-cyclopentyl-9H-purin-6-ylamino]-piperidin-1-yl}-1-(4-methyl-phenyl)-methanone;

trans-1-{4-[2-(4-Amino-cyclohexylamino)-9-cyclopentyl-9H-purin-6-ylamino]-piperidin-1-yl}-1-(2,4-dichloro-phenyl)-methanone;

trans-1-{4-[2-(4-Amino-cyclohexylamino)-9-cyclopentyl-9H-purin-6-ylamino]-piperidin-1-yl}-1-(3,5-dichloro-phenyl)-methanone;

trans-1-{4-[2-(4-Amino-cyclohexylamino)-9-isopropyl-9H-purin-6-ylamino]-piperidin-1-yl}-2-phenoxy-ethanone dihydrochloride;

trans-4-[2-(4-Amino-cyclohexylamino)-9-cyclopentyl-9H-purin-6-ylamino]-piperidine-1-carboxylic acid 4-bromo-phenyl ester dihydrochloride;

trans-4-[2-(4-Amino-cyclohexylamino)-9-cyclopentyl-9H-purin-6-ylamino]-piperidine-1-carboxylic acid p-tolyl ester dihydrochloride;

trans-4-[2-(4-Amino-cyclohexylamino)-9-cyclopentyl-9H-purin-6-ylamino]-piperidine-1-carboxylic acid 4-methoxycarbonyl-phenyl ester dihydrochloride;

trans-4-[2-(4-Amino-cyclohexylamino)-9-cyclopentyl-9H-purin-6-ylamino]-piperidine-1-carboxylic acid 4-methoxy-phenyl ester dihydrochloride;

trans-4-[2-(4-Amino-cyclohexylamino)-9-cyclopentyl-9H-purin-6-ylamino]-piperidine-1-carboxylic acid phenyl ester dihydrochloride;

trans-4-[2-(4-Amino-cyclohexylamino)-9-cyclopentyl-9H-purin-6-ylamino]-piperidine-1-carboxylic acid (1R,2S,5R)-2-isopropyl-5-methyl-cyclohexyl ester dihydrochloride;

trans-4-[2-(4-Amino-cyclohexylamino)-9-cyclopentyl-9H-purin-6-ylamino]-piperidine-1-carboxylic acid 4-fluoro-phenyl ester dihydrochloride;

trans-4-[2-(4-Amino-cyclohexylamino)-9-cyclopentyl-9H-purin-6-ylamino]-piperidine-1-carboxylic acid 4-chloro-phenyl ester dihydrochloride;

trans-4-[2-(4-Amino-cyclohexylamino)-9-cyclopentyl-9H-purin-6-ylamino]-piperidine-1-carboxylic acid 4-nitro-phenyl ester dihydrochloride;

trans-4-[2-(4-Amino-cyclohexylamino)-9-cyclopentyl-9H-purin-6-ylamino]-piperidine-1-carboxylic acid benzyl ester dihydrochloride;

trans-4-[2-(4-Amino-cyclohexylamino)-9-cyclopentyl-9H-purin-6-ylamino]-piperidine-1-carboxylic acid isobutyl ester dihydrochloride;

trans-4-[2-(4-Amino-cyclohexylamino)-9-cyclopentyl-9H-purin-6-ylamino]-piperidine-1-carboxylic acid butyl ester dihydrochloride;

trans-4-[2-(4-Amino-cyclohexylamino)-9-cyclopentyl-9H-purin-6-ylamino]-piperidine-1-carboxylic acid ethyl ester dihydrochloride;

trans-4-[2-(4-Amino-cyclohexylamino)-9-cyclopentyl-9H-purin-6-ylamino]-piperidine-1-carboxylic acid 4-nitro-benzyl ester dihydrochloride;

trans-4-[2-(4-Amino-cyclohexylamino)-9-cyclopentyl-9H-purin-6-ylamino]-piperidine-1-carboxylic acid allyl ester dihydrochloride;

trans-4-[2-(4-Amino-cyclohexylamino)-9-cyclopentyl-9H-purin-6-ylamino]-piperidine-1-carboxylic acid propyl ester dihydrochloride;

(±)-trans-4-[2-(4-Amino-cyclohexylamino)-9-cyclopentyl-9H-purin-6-ylamino]-piperidine-1-carboxylic acid 2-ethyl-hexyl ester dihydrochloride;

trans-4-[2-(4-Amino-cyclohexylamino)-9-cyclopentyl-9H-purin-6-ylamino]-piperidine-1-carboxylic acid hexyl ester dihydrochloride;

trans-4-[2-(4-Amino-cyclohexylamino)-9-cyclopentyl-9H-purin-6-ylamino]-piperidine-1-carboxylic acid 2-nitro-phenyl ester dihydrochloride;

trans-4-[2-(4-Amino-cyclohexylamino)-9-cyclopentyl-9H-purin-6-ylamino]-piperidine-1-carboxylic acid but-3-enyl ester dihydrochloride;

trans-4-[2-(4-Amino-cyclohexylamino)-9-cyclopentyl-9H-purin-6-ylamino]-piperidine-1-carboxylic acid 4,5-dimethoxy-2-nitro-benzyl ester dihydrochloride;

trans-4-[2-(4-Amino-cyclohexylamino)-9-cyclopentyl-9H-purin-6-ylamino]-piperidine-1-carboxylic acid prop-2-ynyl ester dihydrochloride;

trans-4-[2-(4-Amino-cyclohexylamino)-9-cyclopentyl-9H-purin-6-ylamino]-piperidine-1-carboxylic acid 2,2-dimethyl-propyl ester dihydrochloride;

trans-4-[2-(4-Amino-cyclohexylamino)-9-isopropyl-9H-purin-6-ylamino]-piperidine-1-carboxylic acid ethyl ester dihydrochloride;

trans-N²-(4-Amino-cyclohexyl)-N⁶-(1-benzenesulfonyl-piperidin-4-yl)-9-cyclopentyl-9H-purine-2,6-diamine dihydrochloride;

trans-N²-(4-Amino-cyclohexyl)-9-cyclopentyl-N⁶-[1-(4-fluoro-benzenesulfonyl)-piperidin-4-yl]-9H-purine-2,6-diamine dihydrochloride;

trans-1-{4-[2-(4-Amino-cyclohexylamino)-9-cyclopentyl-9H-purin-6-ylamino]-piperidine-1-sulfonylmethyl}-7,7-dimethyl-bicyclo[2.2.1]heptan-2-one dihydrochloride;

trans-N²-(4-Amino-cyclohexyl)-9-cyclopentyl-N⁶-[1-(4-chloro-benzenesulfonyl)-piperidin-4-yl]-9H-purine-2,6-diamine dihydrochloride;

trans-N²-(4-Amino-cyclohexyl)-9-cyclopentyl-N⁶-[1-(4-cyano-benzenesulfonyl)-piperidin-4-yl]-9H-purine-2,6-diamine dihydrochloride;

trans-N²-(4-Amino-cyclohexyl)-9-cyclopentyl-N⁶-[1-(3,5-dimethyl-isoxazole-4-sulfonyl)-piperidin-4-yl]-9H-purine-2,6-diamine dihydrochloride;

trans-2-{4-[2-(4-Amino-cyclohexylamino)-9-cyclopentyl-9H-purin-6-ylamino]-piperidine-1-sulfonyl}-benzoic acid methyl ester dihydrochloride;

trans-N²-(4-Amino-cyclohexyl)-9-cyclopentyl-N⁶-[1-(3-trifluoromethyl-benzenesulfonyl)-piperidin-4-yl]-9H-purine-2,6-diamine dihydrochloride;

trans-N-(5-{4-[2-(4-Amino-cyclohexylamino)-9-cyclopentyl-9H-purin-6-ylamino]-piperidine-1-sulfonyl}-4-methyl-thiazol-2-yl)-acetamide dihydrochloride;

trans-N²-(4-Amino-cyclohexyl)-9-cyclopentyl-N⁶-[1-(4-bromo-benzenesulfonyl)-piperidin-4-yl]-9H-purine-2,6-diamine dihydrochloride;

trans-N-(4-{4-[2-(4-Amino-cyclohexylamino)-9-cyclopentyl-9H-purin-6-ylamino]-piperidine-1-sulfonyl}-phenyl)-acetamide dihydrochloride;

trans-N²-(4-Amino-cyclohexyl)-9-cyclopentyl-N⁶-[1-(naphthalene-2-sulfonyl)-piperidin-4-yl]-9H-purine-2,6-diamine dihydrochloride;

trans-2-{4-[2-(4-Amino-cyclohexylamino)-9-cyclopentyl-9H-purin-6-ylamino]-piperidine-1-sulfonyl}-4,6-dichloro-phenol dihydrochloride;

trans-N²-(4-Amino-cyclohexyl)-9-cyclopentyl-N⁶-[1-((E)-2-phenyl-ethenesulfonyl)-piperidin-4-yl]-9H-purine-2,6-diamine dihydrochloride;

trans-N²-(4-Amino-cyclohexyl)-9-cyclopentyl-N⁶-(1-phenylmethanesulfonyl-piperidin-4-yl)-9H-purine-2,6-diamine dihydrochloride;

trans-N²-(4-Amino-cyclohexyl)-9-cyclopentyl-N⁶-[1-(4-nitro-benzenesulfonyl)-piperidin-4-yl]-9H-purine-2,6-diamine dihydrochloride;

trans-N²-(4-Amino-cyclohexyl)-9-cyclopentyl-N⁶-[1-(2,6-dichloro-benzenesulfonyl)-piperidin-4-yl]-9H-purine-2,6-diamine dihydrochloride;

trans-N²-(4-Amino-cyclohexyl)-9-cyclopentyl-N⁶-[1-(4-iodo-benzenesulfonyl)-piperidin-4-yl]-9H-purine-2,6-diamine dihydrochloride;

trans-N²-(4-Amino-cyclohexyl)-9-cyclopentyl-N⁶-[1-(naphthalene-1-sulfonyl)-piperidin-4-yl]-9H-purine-2,6-diamine dihydrochloride;

trans-N²-(4-Amino-cyclohexyl)-9-cyclopentyl-N⁶-[1-(toluene-4-sulfonyl)-piperidin-4-yl]-9H-purine-2,6-diamine dihydrochloride;

trans-N²-(4-Amino-cyclohexyl)-9-cyclopentyl-N⁶-[1-(propane-2-sulfonyl)-piperidin-4-yl]-9H-purine-2,6-diamine dihydrochloride;

trans-4-{4-[2-(4-Amino-cyclohexylamino)-9-cyclopentyl-9H-purin-6-ylamino]-piperidine-1-sulfonyl}-benzoic acid dihydrochloride;

trans-N²-(4-Amino-cyclohexyl)-9-cyclopentyl-N⁶-[1-(3-nitro-benzenesulfonyl)-piperidin-4-yl]-9H-purine-2,6-diamine dihydrochloride;

trans-N²-(4-Amino-cyclohexyl)-9-cyclopentyl-N⁶-[1-(thiophene-2-sulfonyl)-piperidin-4-yl]-9H-purine-2,6-diamine dihydrochloride;

trans-N²-(4-Amino-cyclohexyl)-N⁶-[1-(butane-1-sulfonyl)-piperidin-4-yl]-9-cyclopentyl-9H-purine-2,6-diamine dihydrochloride;

trans-N²-(4-Amino-cyclohexyl)-N⁶-[1-(4-tert-butyl-benzenesulfonyl)-piperidin-4-yl]-9-cyclopentyl-9H-purine-2,6-diamine dihydrochloride;

trans-N²-(4-Amino-cyclohexyl)-N⁶-[1-(propane-1-sulfonyl)-piperidin-4-yl]-9-cyclopentyl-9H-purine-2,6-diamine dihydrochloride;

trans-N²-(4-Amino-cyclohexyl)-9-cyclopentyl-N⁶-[1-(2-nitro-4-trifluoromethyl-benzenesulfonyl)-piperidin-4-yl]-9H-purine-2,6-diamine dihydrochloride;

trans-N²-(4-Amino-cyclohexyl)-9-cyclopentyl-N⁶-[1-(2,2,2-trifluoro-ethanesulfonyl)-piperidin-4-yl]-9H-purine-2,6-diamine dihydrochloride;

trans-N²-(4-Amino-cyclohexyl)-9-cyclopentyl-N⁶-[1-(4-trifluoromethoxy-benzenesulfonyl)-piperidin-4-yl]-9H-purine-2,6-diamine dihydrochloride;

trans-3-{4-[2-(4-Amino-cyclohexylamino)-9-cyclopentyl-9H-purin-6-ylamino]-piperidine-1-sulfonyl}-benzoic acid methyl ester dihydrochloride;

trans-N²-(4-Amino-cyclohexyl)-9-cyclopentyl-N⁶-[1-(2-bromo-benzenesulfonyl)-piperidin-4-yl]-9H-purine-2,6-diamine dihydrochloride;

trans-N²-(4-Amino-cyclohexyl)-9-cyclopentyl-N⁶-[1-(3,4-dimethoxy-benzenesulfonyl)-piperidin-4-yl]-9H-purine-2,6-diamine dihydrochloride;

trans-N²-(4-Amino-cyclohexyl)-9-cyclopentyl-N⁶-[1-(3,4-dichloro-benzenesulfonyl)-piperidin-4-yl]-9H-purine-2,6-diamine dihydrochloride;

trans-N²-(4-Amino-cyclohexyl)-9-cyclopentyl-N⁶-(1-ethanesulfonyl-piperidin-4-yl)-9H-purine-2,6-diamine dihydrochloride;

trans-N²-(4-Amino-cyclohexyl)-N⁶-[1-(4-chloro-3-nitro-benzenesulfonyl)-piperidin-4-yl]-9-cyclopentyl-9H-purine-2,6-diamine dihydrochloride;

trans-N²-(4-Amino-cyclohexyl)-9-cyclopentyl-N⁶-[1-(5-dimethylamino-naphthalene-1-sulfonyl)-piperidin-4-yl]-9H-purine-2,6-diamine dihydrochloride;

trans-N²-(4-Amino-cyclohexyl)-9-cyclopentyl-N⁶-[1-(4-methoxy-benzenesulfonyl)-piperidin-4-yl]-9H-purine-2,6-diamine dihydrochloride;

trans-N²-(4-Amino-cyclohexyl)-9-cyclopentyl-N⁶-[1-(2-nitro-benzenesulfonyl)-piperidin-4-yl]-9H-purine-2,6-diamine dihydrochloride;

trans-N²-(4-Amino-cyclohexyl)-9-cyclopentyl-N⁶-[1-(quinoline-8-sulfonyl)-piperidin-4-yl]-9H-purine-2,6-diamine dihydrochloride;

trans-4-{4-[2-(4-Amino-cyclohexylamino)-9-isopropyl-9H-purin-6-ylamino]-piperidine-1-sulfonyl}-benzonitrile dihydrochloride;

trans-4-[2-(4-Amino-cyclohexylamino)-9-cyclopentyl-9H-purin-6-ylamino]-piperidine-1-carboxylic acid phenylamide dihydrochloride;

trans-4-[2-(4-Amino-cyclohexylamino)-9-cyclopentyl-9H-purin-6-ylamino]-piperidine-1-carboxylic acid (4-fluoro-phenyl)-amide dihydrochloride;

trans-4-[2-(4-Amino-cyclohexylamino)-9-cyclopentyl-9H-purin-6-ylamino]-piperidine-1-carboxylic acid ethylamide dihydrochloride;

trans-4-[2-(4-Amino-cyclohexylamino)-9-cyclopentyl-9H-purin-6-ylamino]-piperidine-1-carboxylic acid (4-trifluoromethyl-phenyl)-amide dihydrochloride;

trans-4-[2-(4-Amino-cyclohexylamino)-9-cyclopentyl-9H-purin-6-ylamino]-piperidine-1-carboxylic acid (4-chloro-phenyl)-amide dihydrochloride;

trans-4-[2-(4-Amino-cyclohexylamino)-9-cyclopentyl-9H-purin-6-ylamino]-piperidine-1-carboxylic acid (2,4-dimethoxy-phenyl)-amide dihydrochloride;

trans-4-[2-(4-Amino-cyclohexylamino)-9-cyclopentyl-9H-purin-6-ylamino]-piperidine-1-carboxylic acid (3-fluoro-phenyl)-amide dihydrochloride;

trans-4-[2-(4-Amino-cyclohexylamino)-9-cyclopentyl-9H-purin-6-ylamino]-piperidine-1-carboxylic acid (4-methoxy-phenyl)-amide dihydrochloride;

trans-4-[(1-{4-[2-(4-Amino-cyclohexylamino)-9-cyclopentyl-9H-purin-6-ylamino]-piperidin-1-yl}-methanoyl)-amino]-benzoic acid ethyl ester dihydrochloride;

trans-4-[2-(4-Amino-cyclohexylamino)-9-cyclopentyl-9H-purin-6-ylamino]-piperidine-1-carboxylic acid (3-methoxy-phenyl)-amide dihydrochloride;

(±)-trans-4-[2-(4-Amino-cyclohexylamino)-9-cyclopentyl-9H-purin-6-ylamino]-piperidine-1-carboxylic acid (2-phenyl-cyclopropyl)-amide dihydrochloride;

trans-4-[2-(4-Amino-cyclohexylamino)-9-cyclopentyl-9H-purin-6-ylamino]-piperidine-1-carboxylic acid isopropylamide dihydrochloride;

trans-4-[2-(4-Amino-cyclohexylamino)-9-cyclopentyl-9H-purin-6-ylamino]-piperidine-1-carboxylic acid (2-trifluoromethyl-phenyl)-amide dihydrochloride;

trans-4-[2-(4-Amino-cyclohexylamino)-9-cyclopentyl-9H-purin-6-ylamino]-piperidine-1-carboxylic acid (3-trifluoromethyl-phenyl)-amide dihydrochloride;

trans-4-[2-(4-Amino-cyclohexylamino)-9-cyclopentyl-9H-purin-6-ylamino]-piperidine-1-carboxylic acid ((R)-1-phenyl-ethyl)-amide dihydrochloride;

trans-4-[2-(4-Amino-cyclohexylamino)-9-cyclopentyl-9H-purin-6-ylamino]-piperidine-1-carboxylic acid ((S)-1-phenyl-ethyl)-amide dihydrochloride;

trans-4-[2-(4-Amino-cyclohexylamino)-9-cyclopentyl-9H-purin-6-ylamino]-piperidine-1-carboxylic acid (4-bromo-phenyl)-amide dihydrochloride;

trans-4-[2-(4-Amino-cyclohexylamino)-9-cyclopentyl-9H-purin-6-ylamino]-piperidine-1-carboxylic acid (2-methoxy-phenyl)-amide dihydrochloride;

trans-4-[2-(4-Amino-cyclohexylamino)-9-cyclopentyl-9H-purin-6-ylamino]-piperidine-1-carboxylic acid allylamide dihydrochloride;

trans-4-[2-(4-Amino-cyclohexylamino)-9-cyclopentyl-9H-purin-6-ylamino]-piperidine-1-carboxylic acid (3-chloro-phenyl)-amide dihydrochloride;

trans-4-[2-(4-Amino-cyclohexylamino)-9-cyclopentyl-9H-purin-6-ylamino]-piperidine-1-carboxylic acid (2,4-difluoro-phenyl)-amide dihydrochloride;

trans-4-[2-(4-Amino-cyclohexylamino)-9-cyclopentyl-9H-purin-6-ylamino]-piperidine-1-carboxylic acid (2,4-dichloro-phenyl)-amide dihydrochloride;

trans-4-[2-(4-Amino-cyclohexylamino)-9-cyclopentyl-9H-purin-6-ylamino]-piperidine-1-carboxylic acid (2-bromo-phenyl)-amide dihydrochloride;

trans-4-[2-(4-Amino-cyclohexylamino)-9-cyclopentyl-9H-purin-6-ylamino]-piperidine-1-carboxylic acid (2-chloro-phenyl)-amide dihydrochloride;

trans-4-[2-(4-Amino-cyclohexylamino)-9-cyclopentyl-9H-purin-6-ylamino]-piperidine-1-carboxylic acid (3-bromo-phenyl)-amide dihydrochloride;

trans-4-[2-(4-Amino-cyclohexylamino)-9-cyclopentyl-9H-purin-6-ylamino]-piperidine-1-carboxylic acid (2-ethoxy-phenyl)-amide dihydrochloride;

trans-N-(1-{4-[2-(4-Amino-cyclohexylamino)-9-cyclopentyl-9H-purin-6-ylamino]-piperidin-1-yl}-methanoyl)-benzamide dihydrochloride;

trans-(1-{4-[2-(4-Amino-cyclohexylamino)-9-cyclopentyl-9H-purin-6-ylamino]-piperidin-1-yl}-methanoyl)-carbamic acid ethyl ester dihydrochloride;

trans-4-[2-(4-Amino-cyclohexylamino)-9-cyclopentyl-9H-purin-6-ylamino]-piperidine-1-carboxylic acid (2-trifluoromethoxy-phenyl)-amide dihydrochloride;

trans-4-[2-(4-Amino-cyclohexylamino)-9-cyclopentyl-9H-purin-6-ylamino]-piperidine-1-carboxylic acid (4-trifluoromethoxy-phenyl)-amide dihydrochloride;

trans-4-[2-(4-Amino-cyclohexylamino)-9-cyclopentyl-9H-purin-6-ylamino]-piperidine-1-carboxylic acid (3,5-bis-trifluoromethyl-phenyl)-amide dihydrochloride;

trans-4-[2-(4-Amino-cyclohexylamino)-9-cyclopentyl-9H-purin-6-ylamino]-piperidine-1-carboxylic acid (2-chloro-5-trifluoromethyl-phenyl)-amide dihydrochloride;

trans-4-[2-(4-Amino-cyclohexylamino)-9-cyclopentyl-9H-purin-6-ylamino]-piperidine-1-carboxylic acid (4-chloro-2-trifluoromethyl-phenyl)-amide dihydrochloride;

trans-4-[2-(4-Amino-cyclohexylamino)-9-cyclopentyl-9H-purin-6-ylamino]-piperidine-1-carboxylic acid (4-chloro-3-trifluoromethyl-phenyl)-amide dihydrochloride;

trans-4-[2-(4-Amino-cyclohexylamino)-9-cyclopentyl-9H-purin-6-ylamino]-piperidine-1-carboxylic acid (2,5-difluoro-phenyl)-amide dihydrochloride;

trans-4-[2-(4-Amino-cyclohexylamino)-9-cyclopentyl-9H-purin-6-ylamino]-piperidine-1-carboxylic acid adamantan-1-ylamide dihydrochloride;

trans-4-[2-(4-Amino-cyclohexylamino)-9-cyclopentyl-9H-purin-6-ylamino]-piperidine-1-carboxylic acid (3,5-dichloro-phenyl)-amide dihydrochloride;

trans-4-[2-(4-Amino-cyclohexylamino)-9-cyclopentyl-9H-purin-6-ylamino]-piperidine-1-carboxylic acid (4-methyl-phenyl)-amide dihydrochloride;

trans-4-[2-(4-Amino-cyclohexylamino)-9-cyclopentyl-9H-purin-6-ylamino]-piperidine-1-carboxylic acid pentylamide dihydrochloride;

trans-4-[2-(4-Amino-cyclohexylamino)-9-cyclopentyl-9H-purin-6-ylamino]-piperidine-1-carboxylic acid hexylamide dihydrochloride;

trans-4-[2-(4-Amino-cyclohexylamino)-9-cyclopentyl-9H-purin-6-ylamino]-piperidine-1-carboxylic acid (4-methylsulfanyl-phenyl)-amide dihydrochloride;

trans-4-[2-(4-Amino-cyclohexylamino)-9-cyclopentyl-9H-purin-6-ylamino]-piperidine-1-carboxylic acid biphenyl-2-yl-amide dihydrochloride;

trans-4-[2-(4-Amino-cyclohexylamino)-9-cyclopentyl-9H-purin-6-ylamino]-piperidine-1-carboxylic acid (4-acetyl-phenyl)-amide dihydrochloride;

trans-4-[2-(4-Amino-cyclohexylamino)-9-cyclopentyl-9H-purin-6-ylamino]-piperidine-1-carboxylic acid (3-acetyl-phenyl)-amide dihydrochloride;

trans-4-[2-(4-Amino-cyclohexylamino)-9-cyclopentyl-9H-purin-6-ylamino]-piperidine-1-carboxylic acid (4-isopropyl-phenyl)-amide dihydrochloride;

trans-4-[2-(4-Amino-cyclohexylamino)-9-cyclopentyl-9H-purin-6-ylamino]-piperidine-1-carboxylic acid (4-ethoxy-phenyl)-amide dihydrochloride;

trans-4-[2-(4-Amino-cyclohexylamino)-9-cyclopentyl-9H-purin-6-ylamino]-piperidine-1-carboxylic acid tert-butyl-amide dihydrochloride;

trans-2-[(1-{4-[2-(4-Amino-cyclohexylamino)-9-cyclopentyl-9H-purin-6-ylamino]-piperidin-1-yl}-methanoyl)-amino]-benzoic acid methyl ester dihydrochloride;

trans-4-[2-(4-Amino-cyclohexylamino)-9-cyclopentyl-9H-purin-6-ylamino]-piperidine-1-carboxylic acid (3-cyano-phenyl)-amide dihydrochloride;

trans-3-[(1-{4-[2-(4-Amino-cyclohexylamino)-9-cyclopentyl-9H-purin-6-ylamino]-piperidin-1-yl}-methanoyl)-amino]-benzoic acid ethyl ester dihydrochloride;

trans-4-[2-(4-Amino-cyclohexylamino)-9-cyclopentyl-9H-purin-6-ylamino]-piperidine-1-carboxylic acid (2-chloro-6-methyl-phenyl)-amide dihydrochloride;

trans-4-[2-(4-Amino-cyclohexylamino)-9-cyclopentyl-9H-purin-6-ylamino]-piperidine-1-carboxylic acid phenethyl-amide dihydrochloride;

trans-4-[2-(4-Amino-cyclohexylamino)-9-cyclopentyl-9H-purin-6-ylamino]-piperidine-1-carboxylic acid (3,4,5-trimethoxy-phenyl)-amide dihydrochloride;

trans-2-[(1-{4-[2-(4-Amino-cyclohexylamino)-9-cyclopentyl-9H-purin-6-ylamino]-piperidin-1-yl}-methanoyl)-amino]-benzoic acid ethyl ester dihydrochloride;

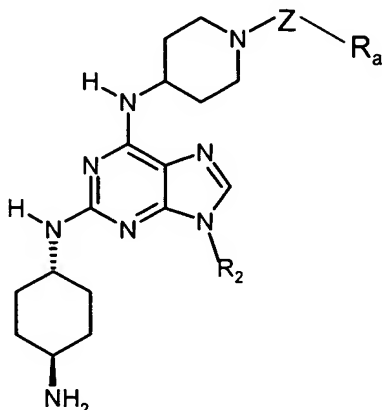
trans-4-[2-(4-Amino-cyclohexylamino)-9-cyclopentyl-9H-purin-6-ylamino]-piperidine-1-carboxylic acid (2-fluoro-5-trifluoromethyl-phenyl)-amide dihydrochloride;
trans-4-[2-(4-Amino-cyclohexylamino)-9-cyclopentyl-9H-purin-6-ylamino]-piperidine-1-carboxylic acid (2-fluoro-6-trifluoromethyl-phenyl)-amide dihydrochloride;
trans-4-[2-(4-Amino-cyclohexylamino)-9-cyclopentyl-9H-purin-6-ylamino]-piperidine-1-carboxylic acid (4-fluoro-2-trifluoromethyl-phenyl)-amide dihydrochloride;
trans-4-[2-(4-Amino-cyclohexylamino)-9-cyclopentyl-9H-purin-6-ylamino]-piperidine-1-carboxylic acid (4-fluoro-3-trifluoromethyl-phenyl)-amide dihydrochloride;
trans-4-[2-(4-Amino-cyclohexylamino)-9-cyclopentyl-9H-purin-6-ylamino]-piperidine-1-carboxylic acid butylamide dihydrochloride;
trans-4-[2-(4-Amino-cyclohexylamino)-9-cyclopentyl-9H-purin-6-ylamino]-piperidine-1-carboxylic acid cyclohexylamide dihydrochloride;
trans-4-[2-(4-Amino-cyclohexylamino)-9-cyclopentyl-9H-purin-6-ylamino]-piperidine-1-carboxylic acid propylamide dihydrochloride;
trans-4-[2-(4-Amino-cyclohexylamino)-9-cyclopentyl-9H-purin-6-ylamino]-piperidine-1-carboxylic acid (2-fluoro-phenyl)-amide dihydrochloride;
trans-4-[2-(4-Amino-cyclohexylamino)-9-cyclopentyl-9H-purin-6-ylamino]-piperidine-1-carboxylic acid (2-methyl-phenyl)-amide dihydrochloride;
trans-4-[2-(4-Amino-cyclohexylamino)-9-cyclopentyl-9H-purin-6-ylamino]-piperidine-1-carboxylic acid (3,4-dichloro-phenyl)-amide dihydrochloride;
trans-4-[2-(4-Amino-cyclohexylamino)-9-cyclopentyl-9H-purin-6-ylamino]-piperidine-1-carboxylic acid (3-methyl-phenyl)-amide dihydrochloride; or
trans-4-[2-(4-Amino-cyclohexylamino)-9-isopropyl-9H-purin-6-ylamino]-piperidine-1-carboxylic acid (4-trifluoromethoxy-phenyl)-amide dihydrochloride;

or a pharmaceutically acceptable salt, optical isomer, solvate or hydrate thereof.

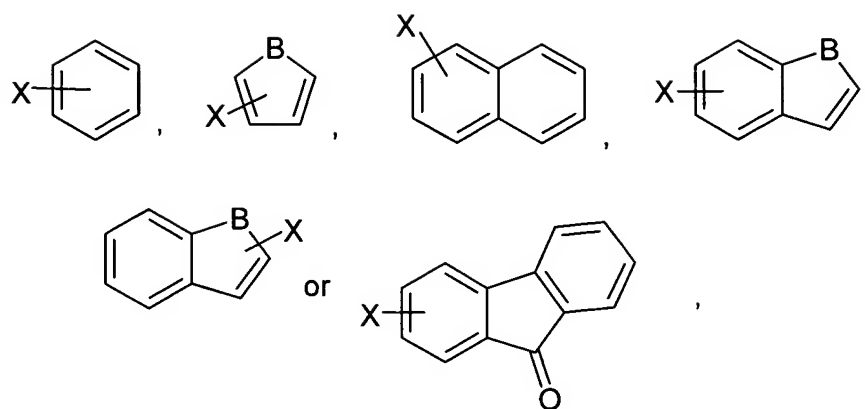
3. A method of treating a hyperproliferative disorder in a patient by administration of a compound according to claim 1.
4. The method according to claim 3, wherein the hyperproliferative disorder is a neoplastic disease.

5. The method according to claim 4, wherein the neoplastic disease is selected from leukemia, carcinoma, adenocarcinoma, sarcoma, melanoma or a mixed type of neoplasm.
6. The method according to claim 5, wherein the leukemia is selected from acute lymphoblastic leukemia, chronic leukemia, acute myeloblastic leukemia and chronic myelocytic leukemia.
7. The method according to claim 5, wherein the carcinoma is selected from those of the cervix, breast, prostate, esophagus, stomach, small intestines, colon, ovary and lungs.
8. The method according to claim 5, wherein the adenocarcinoma is selected from those of the cervix, breast, prostate, esophagus, stomach, small intestines, colon, ovary and lungs.
9. The method according to claim 5, wherein the sarcoma is selected from oesteroma, osteosarcoma, lipoma, liposarcoma, hemangiomas and hemangiosarcoma.
10. The method according to claim 5, wherein the melanoma is selected from amelanotic melanoma and melanotic melanoma.
11. The method according to claim 5, wherein the mixed type of neoplasm is selected from carcinosarcoma, lymphoid tissue type, follicular reticulum, cell sarcoma and Hodgkins Disease.
12. The method according to claim 3, where in the hyperproliferative disorder is a non-neoplastic disease.
13. The method according to claim 12, wherein the non-neoplastic disease is restinosis or an autoimmune disease.
14. The method according to claim 13, wherein the autoimmune disease is rheumatoid arthritis, Type 1 diabetes, atherosclerosis, allograft rejection, or asthma.
15. A method of preventing apoptosis of cells in a patient by administration of a compound according to claim 1.
16. The method according to claim 15, wherein the cells are neuronal cells.
17. The method according to claim 15, wherein apoptosis is induced by antineoplastic agents.
18. The method according to claim 15, wherein apoptosis is induced by cerebrovascular disease.
19. The method according to claim 15, wherein apoptosis is induced by stroke or infarction.
20. A method of protecting method of protecting neuronal cells from apoptosis comprising administering a compound according to claim 1.

21. A method of protecting neuronal cells from damage induced by antineoplastic agents, comprising administering a compound according to claim 1.
22. A method of inhibiting cyclin-dependent kinases (CDKs) by administering a compound according to claim 1.
23. The method according to claim 22, wherein the CDK is selected from the group consisting of CDK1/cyclin B, CDK2/cyclin E, and CDK4/cyclin D.
24. A compound according to claim 1 of the formula



25. A compound according to claim 24 wherein Z is -C(O)-.
26. A compound according to claim 24 wherein Z is -S(O)₂-.
27. A compound according to claim 25 wherein R_a is -OR₁, or -N(R₁)(R₃).
28. A compound according to claim 25 wherein R_a is -SR₁.
29. A compound according to claim 27 wherein R_a is -OR₁.
30. A compound according to claim 27 wherein R_a is -N(R₁)(R₃).
31. A compound according to any of claims 1, 24, 25, 26, 27, 28, 29 or 30 wherein R₂ is cyclopentyl.
32. A compound according to claims 1 or 24 wherein R₁ is -(CH₂)_nQ_p(CH₂)_nW.
33. A compound according to claim 30 wherein R₁ is -(CH₂)_nQ_p(CH₂)_nW.
34. A compound according to claim 33 wherein W is



where B is -O-, -S-, -NR₆-, where each carbon of the aromatic or heteroaromatic ring may be independently substituted by a nitrogen atom, and each carbon of the aromatic ring may be independently substituted with an X substituent.

35. A compound according to claim 34 wherein W is phenyl, each carbon of which may be independently substituted with an X substituent.

36. A compound according to claim 1 which is

trans-1-{4-[2-(4-Amino-cyclohexylamino)-9-cyclopentyl-9H-purin-6-ylamino]-piperidin-1-yl}-1-(4-fluoro-phenyl)-methanone;

trans-1-{4-[2-(4-Amino-cyclohexylamino)-9-cyclopentyl-9H-purin-6-ylamino]-piperidin-1-yl}-1-(4-trifluoromethyl-phenyl)-methanone;

trans-1-{4-[2-(4-Amino-cyclohexylamino)-9-cyclopentyl-9H-purin-6-ylamino]-piperidin-1-yl}-1-(4-trifluoromethyl-phenyl)-methanone;

trans-1-{4-[2-(4-Amino-cyclohexylamino)-9-cyclopentyl-9H-purin-6-ylamino]-piperidin-1-yl}-1-quinoxalin-2-yl-methanone;

trans-1-{4-[2-(4-Amino-cyclohexylamino)-9-cyclopentyl-9H-purin-6-ylamino]-piperidin-1-yl}-1-benzo[1,3]dioxol-5-yl-methanone;

trans-1-{4-[2-(4-Amino-cyclohexylamino)-9-cyclopentyl-9H-purin-6-ylamino]-piperidin-1-yl}-1-(3-chloro-phenyl)-methanone;

trans-1-{4-[2-(4-Amino-cyclohexylamino)-9-cyclopentyl-9H-purin-6-ylamino]-piperidin-1-yl}-1-(2-methoxy-phenyl)-methanone;

trans-1-{4-[2-(4-Amino-cyclohexylamino)-9-cyclopentyl-9H-purin-6-ylamino]-piperidin-1-yl}-1-(4-methoxy-phenyl)-methanone;

trans-1-{4-[2-(4-Amino-cyclohexylamino)-9-cyclopentyl-9H-purin-6-ylamino]-piperidin-1-yl}-1-phenyl-methanone;

trans-1-{4-[2-(4-Amino-cyclohexylamino)-9-cyclopentyl-9H-purin-6-ylamino]-piperidin-1-yl}-1-thiophen-2-yl-methanone;

trans-4-(1-{4-[2-(4-Amino-cyclohexylamino)-9-cyclopentyl-9H-purin-6-ylamino]-piperidin-1-yl}-methanoyl)-benzoic acid methyl ester;

trans-1-{4-[2-(4-Amino-cyclohexylamino)-9-cyclopentyl-9H-purin-6-ylamino]-piperidin-1-yl}-1-(2-fluoro-3-trifluoromethyl-phenyl)-methanone;

trans-1-{4-[2-(4-Amino-cyclohexylamino)-9-cyclopentyl-9H-purin-6-ylamino]-piperidin-1-yl}-1-(2-bromo-phenyl)-methanone;

trans-1-{4-[2-(4-Amino-cyclohexylamino)-9-cyclopentyl-9H-purin-6-ylamino]-piperidin-1-yl}-1-(2,6-dichloro-phenyl)-methanone;

trans-1-{4-[2-(4-Amino-cyclohexylamino)-9-cyclopentyl-9H-purin-6-ylamino]-piperidin-1-yl}-1-(3,4-dichloro-phenyl)-methanone;

trans-1-{4-[2-(4-Amino-cyclohexylamino)-9-cyclopentyl-9H-purin-6-ylamino]-piperidin-1-yl}-1-(3,4,5-trimethoxy-phenyl)-methanone;

trans-1-{4-[2-(4-Amino-cyclohexylamino)-9-cyclopentyl-9H-purin-6-ylamino]-piperidin-1-yl}-1-(3,5-dimethoxy-phenyl)-methanone;

trans-1-{4-[2-(4-Amino-cyclohexylamino)-9-cyclopentyl-9H-purin-6-ylamino]-piperidin-1-yl}-1-(4-butoxy-phenyl)-methanone;

trans-1-{4-[2-(4-Amino-cyclohexylamino)-9-cyclopentyl-9H-purin-6-ylamino]-piperidin-1-yl}-1-(4-heptoxy-phenyl)-methanone;

trans-1-{4-[2-(4-Amino-cyclohexylamino)-9-cyclopentyl-9H-purin-6-ylamino]-piperidin-1-yl}-1-(4-tert-butyl-phenyl)-methanone;

trans-1-{4-[2-(4-Amino-cyclohexylamino)-9-cyclopentyl-9H-purin-6-ylamino]-piperidin-1-yl}-1-(4-butyl-phenyl)-methanone;

trans-1-{4-[2-(4-Amino-cyclohexylamino)-9-cyclopentyl-9H-purin-6-ylamino]-piperidin-1-yl}-1-(4-pentyl-phenyl)-methanone;

trans-1-{4-[2-(4-Amino-cyclohexylamino)-9-cyclopentyl-9H-purin-6-ylamino]-piperidin-1-yl}-1-(4-hexyl-phenyl)-methanone;

trans-1-{4-[2-(4-Amino-cyclohexylamino)-9-cyclopentyl-9H-purin-6-ylamino]-piperidin-1-yl}-1-(4-heptyl-phenyl)-methanone;

trans-1-{4-[2-(4-Amino-cyclohexylamino)-9-cyclopentyl-9H-purin-6-ylamino]-piperidin-1-yl}-1-(4-cyano-phenyl)-methanone;

trans-1-{4-[2-(4-Amino-cyclohexylamino)-9-cyclopentyl-9H-purin-6-ylamino]-piperidin-1-yl}-1-(3-nitro-phenyl)-methanone;

trans-1-{4-[2-(4-Amino-cyclohexylamino)-9-cyclopentyl-9H-purin-6-ylamino]-piperidin-1-yl}-1-(4-nitro-phenyl)-methanone;

trans-1-{4-[2-(4-Amino-cyclohexylamino)-9-cyclopentyl-9H-purin-6-ylamino]-piperidin-1-yl}-2-phenoxy-ethanone;

trans-3-{4-[2-(4-Amino-cyclohexylamino)-9-cyclopentyl-9H-purin-6-ylamino]-piperidin-1-yl}-3-oxo-propionic acid ethyl ester;

trans 1-{4-[2-(4-Amino-cyclohexylamino)-9-cyclopentyl-9H-purin-6-ylamino]-piperidin-1-yl}-3-methyl-but-2-en-1-one;

trans-1-{4-[2-(4-Amino-cyclohexylamino)-9-cyclopentyl-9H-purin-6-ylamino]-piperidin-1-yl}-2-(4-chloro-phenoxy)-ethanone;

trans 1-{4-[2-(4-Amino-cyclohexylamino)-9-cyclopentyl-9H-purin-6-ylamino]-piperidin-1-yl}-2-(3,4-dimethoxy-phenyl)-ethanone;

trans 1-{4-[2-(4-Amino-cyclohexylamino)-9-cyclopentyl-9H-purin-6-ylamino]-piperidin-1-yl}-3-phenyl-propan-1-one;

trans 1-{4-[2-(4-Amino-cyclohexylamino)-9-cyclopentyl-9H-purin-6-ylamino]-piperidin-1-yl}-3-(2,5-dimethoxy-phenyl)-propan-1-one;

trans (E)-1-{4-[2-(4-Amino-cyclohexylamino)-9-cyclopentyl-9H-purin-6-ylamino]-piperidin-1-yl}-but-2-en-1-one;

trans-1-{4-[2-(4-Amino-cyclohexylamino)-9-cyclopentyl-9H-purin-6-ylamino]-piperidin-1-yl}-3-cyclopentyl-propan-1-one;

trans-1-{4-[2-(4-Amino-cyclohexylamino)-9-cyclopentyl-9H-purin-6-ylamino]-piperidin-1-yl}-2-benzyloxy-ethanone;

trans-1-{4-[2-(4-Amino-cyclohexylamino)-9-cyclopentyl-9H-purin-6-ylamino]-piperidin-1-yl}-2-(3-methoxy-phenyl)-ethanone;

trans-1-{4-[2-(4-Amino-cyclohexylamino)-9-cyclopentyl-9H-purin-6-ylamino]-piperidin-1-yl}-1-cyclopentyl-methanone;

trans-1-{4-[2-(4-Amino-cyclohexylamino)-9-cyclopentyl-9H-purin-6-ylamino]-piperidin-1-yl}-2,2-diphenyl-ethanone;

trans-1-{4-[2-(4-Amino-cyclohexylamino)-9-cyclopentyl-9H-purin-6-ylamino]-piperidin-1-yl}-2-phenyl-butan-1-one;

trans-1-{4-[2-(4-Amino-cyclohexylamino)-9-cyclopentyl-9H-purin-6-ylamino]-piperidin-1-yl}-2-(4-methoxy-phenyl)-ethanone;

(±)-trans-1-{4-[2-(4-Amino-cyclohexylamino)-9-cyclopentyl-9H-purin-6-ylamino]-piperidin-1-yl}-1-(2-phenyl-cyclopropyl)-methanone;

trans-(E)-1-{4-[2-(4-Amino-cyclohexylamino)-9-cyclopentyl-9H-purin-6-ylamino]-piperidin-1-yl}-3-(3-trifluoromethyl-phenyl)-propenone;

(±)-trans-1-{4-[2-(4-Amino-cyclohexylamino)-9-cyclopentyl-9H-purin-6-ylamino]-piperidin-1-yl}-3,5,5-trimethyl-hexan-1-one;

trans-1-{4-[2-(4-Amino-cyclohexylamino)-9-cyclopentyl-9H-purin-6-ylamino]-piperidin-1-yl}-2-phenylsulfanyl-ethanone;

trans-(S)-1-{4-[2-(4-Amino-cyclohexylamino)-9-cyclopentyl-9H-purin-6-ylamino]-piperidin-1-yl}-2-hydroxy-propan-1-one;

trans-1-{4-[2-(4-Amino-cyclohexylamino)-9-cyclopentyl-9H-purin-6-ylamino]-piperidin-1-yl}-2-(4-fluoro-phenyl)-ethanone;

trans-1-{4-[2-(4-Amino-cyclohexylamino)-9-cyclopentyl-9H-purin-6-ylamino]-piperidin-1-yl}-pent-4-en-1-one;

(±)-trans-1-{4-[2-(4-Amino-cyclohexylamino)-9-cyclopentyl-9H-purin-6-ylamino]-piperidin-1-yl}-2-hydroxy-2-phenyl-ethanone;

trans-1-{4-[2-(4-Amino-cyclohexylamino)-9-cyclopentyl-9H-purin-6-ylamino]-piperidin-1-yl}-3,3-dimethyl-butan-1-one;

trans-1-{4-[2-(4-Amino-cyclohexylamino)-9-cyclopentyl-9H-purin-6-ylamino]-piperidin-1-yl}-2-phenyl-ethanone;

trans-1-{4-[2-(4-Amino-cyclohexylamino)-9-cyclopentyl-9H-purin-6-ylamino]-piperidin-1-yl}-propan-1-one;

trans-1-{4-[2-(4-Amino-cyclohexylamino)-9-cyclopentyl-9H-purin-6-ylamino]-piperidin-1-yl}-hexan-1-one;

trans-1-{4-[2-(4-Amino-cyclohexylamino)-9-cyclopentyl-9H-purin-6-ylamino]-piperidin-1-yl}-1-cyclohexyl-methanone;

trans-1-{4-[2-(4-Amino-cyclohexylamino)-9-cyclopentyl-9H-purin-6-ylamino]-piperidin-1-yl}-pentan-1-one;

(±)-trans-1-{4-[2-(4-Amino-cyclohexylamino)-9-cyclopentyl-9H-purin-6-ylamino]-piperidin-1-yl}-2-ethyl-hexan-1-one;

trans-1-{4-[2-(4-Amino-cyclohexylamino)-9-cyclopentyl-9H-purin-6-ylamino]-piperidin-1-yl}-butan-1-one;

trans-1-{4-[2-(4-Amino-cyclohexylamino)-9-cyclopentyl-9H-purin-6-ylamino]-piperidin-1-yl}-2-methyl-propan-1-one;

trans-1-{4-[2-(4-Amino-cyclohexylamino)-9-cyclopentyl-9H-purin-6-ylamino]-piperidin-1-yl}-3-methyl-butan-1-one;

trans-1-{4-[2-(4-Amino-cyclohexylamino)-9-cyclopentyl-9H-purin-6-ylamino]-piperidin-1-yl}-2-thiophen-2-yl-ethanone;

trans-(E)-1-{4-[2-(4-Amino-cyclohexylamino)-9-cyclopentyl-9H-purin-6-ylamino]-piperidin-1-yl}-3-phenyl-propenone;

trans-1-{4-[2-(4-Amino-cyclohexylamino)-9-cyclopentyl-9H-purin-6-ylamino]-piperidin-1-yl}-1-cyclobutyl-methanone;

trans-1-{4-[2-(4-Amino-cyclohexylamino)-9-cyclopentyl-9H-purin-6-ylamino]-piperidin-1-yl}-1-cyclopropyl-methanone;

trans-1-{4-[2-(4-Amino-cyclohexylamino)-9-cyclopentyl-9H-purin-6-ylamino]-piperidin-1-yl}-2-methoxy-ethanone;

trans-4-(1-{4-[2-(4-Amino-cyclohexylamino)-9-cyclopentyl-9H-purin-6-ylamino]-piperidin-1-yl}-methanoyl)-fluoren-9-one;

trans-1-{4-[2-(4-Amino-cyclohexylamino)-9-cyclopentyl-9H-purin-6-ylamino]-piperidin-1-yl}-1-pyridin-3-yl-methanone;

trans-1-{4-[2-(4-Amino-cyclohexylamino)-9-cyclopentyl-9H-purin-6-ylamino]-piperidin-1-yl}-1-pyridin-4-yl-methanone;

trans-1-{4-[2-(4-Amino-cyclohexylamino)-9-cyclopentyl-9H-purin-6-ylamino]-piperidin-1-yl}-1-(2-fluoro-5-trifluoromethyl-phenyl)-methanone;

trans-1-{4-[2-(4-Amino-cyclohexylamino)-9-cyclopentyl-9H-purin-6-ylamino]-piperidin-1-yl}-1-(2-methyl-phenyl)-methanone;

trans-1-{4-[2-(4-Amino-cyclohexylamino)-9-cyclopentyl-9H-purin-6-ylamino]-piperidin-1-yl}-1-(3-bromo-phenyl)-methanone;

trans-1-{4-[2-(4-Amino-cyclohexylamino)-9-cyclopentyl-9H-purin-6-ylamino]-piperidin-1-yl}-1-(3-chloro-phenyl)-methanone;

trans-1-{4-[2-(4-Amino-cyclohexylamino)-9-cyclopentyl-9H-purin-6-ylamino]-piperidin-1-yl}-1-(3-methyl-phenyl)-methanone;

trans-1-{4-[2-(4-Amino-cyclohexylamino)-9-cyclopentyl-9H-purin-6-ylamino]-piperidin-1-yl}-1-(4-bromo-phenyl)-methanone;
trans-1-{4-[2-(4-Amino-cyclohexylamino)-9-cyclopentyl-9H-purin-6-ylamino]-piperidin-1-yl}-1-(4-chloro-phenyl)-methanone;
trans-1-{4-[2-(4-Amino-cyclohexylamino)-9-cyclopentyl-9H-purin-6-ylamino]-piperidin-1-yl}-1-(4-iodo-phenyl)-methanone;
trans-1-{4-[2-(4-Amino-cyclohexylamino)-9-cyclopentyl-9H-purin-6-ylamino]-piperidin-1-yl}-1-(4-methyl-phenyl)-methanone;
trans-1-{4-[2-(4-Amino-cyclohexylamino)-9-cyclopentyl-9H-purin-6-ylamino]-piperidin-1-yl}-1-(2,4-dichloro-phenyl)-methanone;
trans-1-{4-[2-(4-Amino-cyclohexylamino)-9-cyclopentyl-9H-purin-6-ylamino]-piperidin-1-yl}-1-(3,5-dichloro-phenyl)-methanone; or
trans-1-{4-[2-(4-Amino-cyclohexylamino)-9-isopropyl-9H-purin-6-ylamino]-piperidin-1-yl}-2-phenoxy-ethanone; or

a pharmaceutically acceptable salt, optical isomer, solvate or hydrate thereof.

37. A compound according to claim 1 which is

trans-4-[2-(4-Amino-cyclohexylamino)-9-cyclopentyl-9H-purin-6-ylamino]-piperidine-1-carboxylic acid 4-bromo-phenyl ester;
trans-4-[2-(4-Amino-cyclohexylamino)-9-cyclopentyl-9H-purin-6-ylamino]-piperidine-1-carboxylic acid p-tolyl ester;
trans-4-[2-(4-Amino-cyclohexylamino)-9-cyclopentyl-9H-purin-6-ylamino]-piperidine-1-carboxylic acid 4-methoxycarbonyl-phenyl ester;
trans-4-[2-(4-Amino-cyclohexylamino)-9-cyclopentyl-9H-purin-6-ylamino]-piperidine-1-carboxylic acid 4-methoxy-phenyl ester;
trans-4-[2-(4-Amino-cyclohexylamino)-9-cyclopentyl-9H-purin-6-ylamino]-piperidine-1-carboxylic acid phenyl ester;
trans-4-[2-(4-Amino-cyclohexylamino)-9-cyclopentyl-9H-purin-6-ylamino]-piperidine-1-carboxylic acid (1R,2S,5R)-2-isopropyl-5-methyl-cyclohexyl ester;
trans-4-[2-(4-Amino-cyclohexylamino)-9-cyclopentyl-9H-purin-6-ylamino]-piperidine-1-carboxylic acid 4-fluoro-phenyl ester;
trans-4-[2-(4-Amino-cyclohexylamino)-9-cyclopentyl-9H-purin-6-ylamino]-piperidine-1-carboxylic acid 4-chloro-phenyl ester;

trans-4-[2-(4-Amino-cyclohexylamino)-9-cyclopentyl-9H-purin-6-ylamino]-piperidine-1-carboxylic acid 4-nitro-phenyl ester;

trans-4-[2-(4-Amino-cyclohexylamino)-9-cyclopentyl-9H-purin-6-ylamino]-piperidine-1-carboxylic acid benzyl ester;

trans-4-[2-(4-Amino-cyclohexylamino)-9-cyclopentyl-9H-purin-6-ylamino]-piperidine-1-carboxylic acid isobutyl ester;

trans-4-[2-(4-Amino-cyclohexylamino)-9-cyclopentyl-9H-purin-6-ylamino]-piperidine-1-carboxylic acid butyl ester;

trans-4-[2-(4-Amino-cyclohexylamino)-9-cyclopentyl-9H-purin-6-ylamino]-piperidine-1-carboxylic acid ethyl ester;

trans-4-[2-(4-Amino-cyclohexylamino)-9-cyclopentyl-9H-purin-6-ylamino]-piperidine-1-carboxylic acid 4-nitro-benzyl ester;

trans-4-[2-(4-Amino-cyclohexylamino)-9-cyclopentyl-9H-purin-6-ylamino]-piperidine-1-carboxylic acid allyl ester;

trans-4-[2-(4-Amino-cyclohexylamino)-9-cyclopentyl-9H-purin-6-ylamino]-piperidine-1-carboxylic acid propyl ester;

(±)-trans-4-[2-(4-Amino-cyclohexylamino)-9-cyclopentyl-9H-purin-6-ylamino]-piperidine-1-carboxylic acid 2-ethyl-hexyl ester;

trans-4-[2-(4-Amino-cyclohexylamino)-9-cyclopentyl-9H-purin-6-ylamino]-piperidine-1-carboxylic acid hexyl ester;

trans-4-[2-(4-Amino-cyclohexylamino)-9-cyclopentyl-9H-purin-6-ylamino]-piperidine-1-carboxylic acid 2-nitro-phenyl ester;

trans-4-[2-(4-Amino-cyclohexylamino)-9-cyclopentyl-9H-purin-6-ylamino]-piperidine-1-carboxylic acid but-3-enyl ester;

trans-4-[2-(4-Amino-cyclohexylamino)-9-cyclopentyl-9H-purin-6-ylamino]-piperidine-1-carboxylic acid 4,5-dimethoxy-2-nitro-benzyl ester;

trans-4-[2-(4-Amino-cyclohexylamino)-9-cyclopentyl-9H-purin-6-ylamino]-piperidine-1-carboxylic acid prop-2-ynyl ester;

trans-4-[2-(4-Amino-cyclohexylamino)-9-cyclopentyl-9H-purin-6-ylamino]-piperidine-1-carboxylic acid 2,2-dimethyl-propyl ester; or

trans-4-[2-(4-Amino-cyclohexylamino)-9-isopropyl-9H-purin-6-ylamino]-piperidine-1-carboxylic acid ethyl ester; or

a pharmaceutically acceptable salt, optical isomer, solvate or hydrate thereof.

38. A compound according to claim 1 which is
trans-N²-(4-Amino-cyclohexyl)-9-cyclopentyl-N⁶-[1-(4-fluoro-benzenesulfonyl)-piperidin-4-yl]-9H-purine-2,6-diamine;
trans-1-{4-[2-(4-Amino-cyclohexylamino)-9-cyclopentyl-9H-purin-6-ylamino]-piperidine-1-sulfonylmethyl}-7,7-dimethyl-bicyclo[2.2.1]heptan-2-one;
trans-N²-(4-Amino-cyclohexyl)-9-cyclopentyl-N⁶-[1-(4-chloro-benzenesulfonyl)-piperidin-4-yl]-9H-purine-2,6-diamine;
trans-N²-(4-Amino-cyclohexyl)-9-cyclopentyl-N⁶-[1-(4-cyano-benzenesulfonyl)-piperidin-4-yl]-9H-purine-2,6-diamine;
trans-N²-(4-Amino-cyclohexyl)-9-cyclopentyl-N⁶-[1-(3,5-dimethyl-isoxazole-4-sulfonyl)-piperidin-4-yl]-9H-purine-2,6-diamine;
trans-2-{4-[2-(4-Amino-cyclohexylamino)-9-cyclopentyl-9H-purin-6-ylamino]-piperidine-1-sulfonyl}-benzoic acid methyl ester;
trans-N²-(4-Amino-cyclohexyl)-9-cyclopentyl-N⁶-[1-(3-trifluoromethyl-benzenesulfonyl)-piperidin-4-yl]-9H-purine-2,6-diamine;
trans-N-(5-{4-[2-(4-Amino-cyclohexylamino)-9-cyclopentyl-9H-purin-6-ylamino]-piperidine-1-sulfonyl}-4-methyl-thiazol-2-yl)-acetamide;
trans-N²-(4-Amino-cyclohexyl)-9-cyclopentyl-N⁶-[1-(4-bromo-benzenesulfonyl)-piperidin-4-yl]-9H-purine-2,6-diamine;
trans-N-(4-{4-[2-(4-Amino-cyclohexylamino)-9-cyclopentyl-9H-purin-6-ylamino]-piperidine-1-sulfonyl}-phenyl)-acetamide;
trans-N²-(4-Amino-cyclohexyl)-9-cyclopentyl-N⁶-[1-(naphthalene-2-sulfonyl)-piperidin-4-yl]-9H-purine-2,6-diamine;
trans-2-{4-[2-(4-Amino-cyclohexylamino)-9-cyclopentyl-9H-purin-6-ylamino]-piperidine-1-sulfonyl}-4,6-dichloro-phenol;
trans-N²-(4-Amino-cyclohexyl)-9-cyclopentyl-N⁶-[1-((E)-2-phenyl-ethenesulfonyl)-piperidin-4-yl]-9H-purine-2,6-diamine;
trans-N²-(4-Amino-cyclohexyl)-9-cyclopentyl-N⁶-(1-phenylmethanesulfonyl-piperidin-4-yl)-9H-purine-2,6-diamine;
trans-N²-(4-Amino-cyclohexyl)-9-cyclopentyl-N⁶-[1-(4-nitro-benzenesulfonyl)-piperidin-4-yl]-9H-purine-2,6-diamine;
trans-N²-(4-Amino-cyclohexyl)-9-cyclopentyl-N⁶-[1-(2,6-dichloro-benzenesulfonyl)-piperidin-4-yl]-9H-purine-2,6-diamine;

trans-N²-(4-Amino-cyclohexyl)-9-cyclopentyl-N⁶-[1-(4-iodo-benzenesulfonyl)-piperidin-4-yl]-9H-purine-2,6-diamine;

trans- N²-(4-Amino-cyclohexyl)-9-cyclopentyl-N⁶-[1-(naphthalene-1-sulfonyl)-piperidin-4-yl]-9H-purine-2,6-diamine;

trans-N²-(4-Amino-cyclohexyl)-9-cyclopentyl-N⁶-[1-(toluene-4-sulfonyl)-piperidin-4-yl]-9H-purine-2,6-diamine;

trans-N²-(4-Amino-cyclohexyl)-9-cyclopentyl-N⁶-[1-(propane-2-sulfonyl)-piperidin-4-yl]-9H-purine-2,6-diamine;

trans- 4-{4-[2-(4-Amino-cyclohexylamino)-9-cyclopentyl-9H-purin-6-ylamino]-piperidine-1-sulfonyl}-benzoic acid;

trans-N²-(4-Amino-cyclohexyl)-9-cyclopentyl-N⁶-[1-(3-nitro-benzenesulfonyl)-piperidin-4-yl]-9H-purine-2,6-diamine;

trans-N²-(4-Amino-cyclohexyl)-9-cyclopentyl-N⁶-[1-(thiophene-2-sulfonyl)-piperidin-4-yl]-9H-purine-2,6-diamine;

trans-N²-(4-Amino-cyclohexyl)-N⁶-[1-(butane-1-sulfonyl)-piperidin-4-yl]-9-cyclopentyl-9H-purine-2,6-diamine;

trans-N²-(4-Amino-cyclohexyl)-N⁶-[1-(4-tert-butyl-benzenesulfonyl)-piperidin-4-yl]-9-cyclopentyl-9H-purine-2,6-diamine;

trans- N²-(4-Amino-cyclohexyl)-N⁶-[1-(propane-1-sulfonyl)-piperidin-4-yl]-9-cyclopentyl-9H-purine-2,6-diamine;

trans-N²-(4-Amino-cyclohexyl)-9-cyclopentyl-N⁶-[1-(2-nitro-4-trifluoromethyl-benzenesulfonyl)-piperidin-4-yl]-9H-purine-2,6-diamine;

trans-N²-(4-Amino-cyclohexyl)-9-cyclopentyl-N⁶-[1-(2,2,2-trifluoro-ethanesulfonyl)-piperidin-4-yl]-9H-purine-2,6-diamine;

trans-N²-(4-Amino-cyclohexyl)-9-cyclopentyl-N⁶-[1-(4-trifluoromethoxy-benzenesulfonyl)-piperidin-4-yl]-9H-purine-2,6-diamine;

trans- 3-{4-[2-(4-Amino-cyclohexylamino)-9-cyclopentyl-9H-purin-6-ylamino]-piperidine-1-sulfonyl}-benzoic acid methyl ester;

trans-N²-(4-Amino-cyclohexyl)-9-cyclopentyl-N⁶-[1-(2-bromo-benzenesulfonyl)-piperidin-4-yl]-9H-purine-2,6-diamine;

trans-N²-(4-Amino-cyclohexyl)-9-cyclopentyl-N⁶-[1-(3,4-dimethoxy-benzenesulfonyl)-piperidin-4-yl]-9H-purine-2,6-diamine;

trans-N²-(4-Amino-cyclohexyl)-9-cyclopentyl-N⁶-[1-(3,4-dichloro-benzenesulfonyl)-piperidin-4-yl]-9H-purine-2,6-diamine;
trans-N²-(4-Amino-cyclohexyl)-9-cyclopentyl-N⁶-(1-ethanesulfonyl-piperidin-4-yl)-9H-purine-2,6-diamine;
trans-N²-(4-Amino-cyclohexyl)-N⁶-[1-(4-chloro-3-nitro-benzenesulfonyl)-piperidin-4-yl]-9-cyclopentyl-9H-purine-2,6-diamine;
trans-N²-(4-Amino-cyclohexyl)-9-cyclopentyl-N⁶-[1-(5-dimethylamino-naphthalene-1-sulfonyl)-piperidin-4-yl]-9H-purine-2,6-diamine;
trans-N²-(4-Amino-cyclohexyl)-9-cyclopentyl-N⁶-[1-(4-methoxy-benzenesulfonyl)-piperidin-4-yl]-9H-purine-2,6-diamine;
trans-N²-(4-Amino-cyclohexyl)-9-cyclopentyl-N⁶-[1-(2-nitro-benzenesulfonyl)-piperidin-4-yl]-9H-purine-2,6-diamine;
trans-N²-(4-Amino-cyclohexyl)-9-cyclopentyl-N⁶-[1-(quinoline-8-sulfonyl)-piperidin-4-yl]-9H-purine-2,6-diamine; or
trans-4-{4-[2-(4-Amino-cyclohexylamino)-9-isopropyl-9H-purin-6-ylamino]-piperidine-1-sulfonyl}-benzonitrile; or
a pharmaceutically acceptable salt, optical isomer, solvate or hydrate thereof.

39. A compound according to claim 1 which is

trans-4-[2-(4-Amino-cyclohexylamino)-9-cyclopentyl-9H-purin-6-ylamino]-piperidine-1-carboxylic acid phenylamide;
trans-4-[2-(4-Amino-cyclohexylamino)-9-cyclopentyl-9H-purin-6-ylamino]-piperidine-1-carboxylic acid (4-fluoro-phenyl)-amide;
trans-4-[2-(4-Amino-cyclohexylamino)-9-cyclopentyl-9H-purin-6-ylamino]-piperidine-1-carboxylic acid ethylamide;
trans-4-[2-(4-Amino-cyclohexylamino)-9-cyclopentyl-9H-purin-6-ylamino]-piperidine-1-carboxylic acid (4-trifluoromethyl-phenyl)-amide;
trans-4-[2-(4-Amino-cyclohexylamino)-9-cyclopentyl-9H-purin-6-ylamino]-piperidine-1-carboxylic acid (4-chloro-phenyl)-amide;
trans-4-[2-(4-Amino-cyclohexylamino)-9-cyclopentyl-9H-purin-6-ylamino]-piperidine-1-carboxylic acid (2,4-dimethoxy-phenyl)-amide;
trans-4-[2-(4-Amino-cyclohexylamino)-9-cyclopentyl-9H-purin-6-ylamino]-piperidine-1-carboxylic acid (3-fluoro-phenyl)-amide;

trans-4-[2-(4-Amino-cyclohexylamino)-9-cyclopentyl-9H-purin-6-ylamino]-piperidine-1-carboxylic acid (4-methoxy-phenyl)-amide;

trans-4-[(1-{4-[2-(4-Amino-cyclohexylamino)-9-cyclopentyl-9H-purin-6-ylamino]-piperidin-1-yl}-methanoyl)-amino]-benzoic acid ethyl ester;

trans-4-[2-(4-Amino-cyclohexylamino)-9-cyclopentyl-9H-purin-6-ylamino]-piperidine-1-carboxylic acid (3-methoxy-phenyl)-amide;

(±)-trans-4-[2-(4-Amino-cyclohexylamino)-9-cyclopentyl-9H-purin-6-ylamino]-piperidine-1-carboxylic acid (2-phenyl-cyclopropyl)-amide;

trans-4-[2-(4-Amino-cyclohexylamino)-9-cyclopentyl-9H-purin-6-ylamino]-piperidine-1-carboxylic acid isopropylamide;

trans-4-[2-(4-Amino-cyclohexylamino)-9-cyclopentyl-9H-purin-6-ylamino]-piperidine-1-carboxylic acid (2-trifluoromethyl-phenyl)-amide;

trans-4-[2-(4-Amino-cyclohexylamino)-9-cyclopentyl-9H-purin-6-ylamino]-piperidine-1-carboxylic acid (3-trifluoromethyl-phenyl)-amide;

trans-4-[2-(4-Amino-cyclohexylamino)-9-cyclopentyl-9H-purin-6-ylamino]-piperidine-1-carboxylic acid ((R)-1-phenyl-ethyl)-amide;

trans-4-[2-(4-Amino-cyclohexylamino)-9-cyclopentyl-9H-purin-6-ylamino]-piperidine-1-carboxylic acid ((S)-1-phenyl-ethyl)-amide;

trans-4-[2-(4-Amino-cyclohexylamino)-9-cyclopentyl-9H-purin-6-ylamino]-piperidine-1-carboxylic acid (4-bromo-phenyl)-amide;

trans-4-[2-(4-Amino-cyclohexylamino)-9-cyclopentyl-9H-purin-6-ylamino]-piperidine-1-carboxylic acid (2-methoxy-phenyl)-amide;

trans-4-[2-(4-Amino-cyclohexylamino)-9-cyclopentyl-9H-purin-6-ylamino]-piperidine-1-carboxylic acid allylamide;

trans-4-[2-(4-Amino-cyclohexylamino)-9-cyclopentyl-9H-purin-6-ylamino]-piperidine-1-carboxylic acid (3-chloro-phenyl)-amide;

trans-4-[2-(4-Amino-cyclohexylamino)-9-cyclopentyl-9H-purin-6-ylamino]-piperidine-1-carboxylic acid (2,4-difluoro-phenyl)-amide;

trans-4-[2-(4-Amino-cyclohexylamino)-9-cyclopentyl-9H-purin-6-ylamino]-piperidine-1-carboxylic acid (2,4-dichloro-phenyl)-amide;

trans-4-[2-(4-Amino-cyclohexylamino)-9-cyclopentyl-9H-purin-6-ylamino]-piperidine-1-carboxylic acid (2-bromo-phenyl)-amide;

trans-4-[2-(4-Amino-cyclohexylamino)-9-cyclopentyl-9H-purin-6-ylamino]-piperidine-1-carboxylic acid (2-chloro-phenyl)-amide;

trans-4-[2-(4-Amino-cyclohexylamino)-9-cyclopentyl-9H-purin-6-ylamino]-piperidine-1-carboxylic acid (3-bromo-phenyl)-amide;

trans-4-[2-(4-Amino-cyclohexylamino)-9-cyclopentyl-9H-purin-6-ylamino]-piperidine-1-carboxylic acid (2-ethoxy-phenyl)-amide;

trans-N-(1-{4-[2-(4-Amino-cyclohexylamino)-9-cyclopentyl-9H-purin-6-ylamino]-piperidin-1-yl}-methanoyl)-benzamide;

trans-(1-{4-[2-(4-Amino-cyclohexylamino)-9-cyclopentyl-9H-purin-6-ylamino]-piperidin-1-yl}-methanoyl)-carbamic acid ethyl ester;

trans-4-[2-(4-Amino-cyclohexylamino)-9-cyclopentyl-9H-purin-6-ylamino]-piperidine-1-carboxylic acid (2-trifluoromethoxy-phenyl)-amide;

trans-4-[2-(4-Amino-cyclohexylamino)-9-cyclopentyl-9H-purin-6-ylamino]-piperidine-1-carboxylic acid (4-trifluoromethoxy-phenyl)-amide;

trans-4-[2-(4-Amino-cyclohexylamino)-9-cyclopentyl-9H-purin-6-ylamino]-piperidine-1-carboxylic acid (3,5-bis-trifluoromethyl-phenyl)-amide;

trans-4-[2-(4-Amino-cyclohexylamino)-9-cyclopentyl-9H-purin-6-ylamino]-piperidine-1-carboxylic acid (2-chloro-5-trifluoromethyl-phenyl)-amide;

trans-4-[2-(4-Amino-cyclohexylamino)-9-cyclopentyl-9H-purin-6-ylamino]-piperidine-1-carboxylic acid (4-chloro-2-trifluoromethyl-phenyl)-amide;

trans-4-[2-(4-Amino-cyclohexylamino)-9-cyclopentyl-9H-purin-6-ylamino]-piperidine-1-carboxylic acid (4-chloro-3-trifluoromethyl-phenyl)-amide;

trans-4-[2-(4-Amino-cyclohexylamino)-9-cyclopentyl-9H-purin-6-ylamino]-piperidine-1-carboxylic acid (2,5-difluoro-phenyl)-amide;

trans-4-[2-(4-Amino-cyclohexylamino)-9-cyclopentyl-9H-purin-6-ylamino]-piperidine-1-carboxylic acid adamantan-1-ylamide;

trans-4-[2-(4-Amino-cyclohexylamino)-9-cyclopentyl-9H-purin-6-ylamino]-piperidine-1-carboxylic acid (3,5-dichloro-phenyl)-amide;

trans-4-[2-(4-Amino-cyclohexylamino)-9-cyclopentyl-9H-purin-6-ylamino]-piperidine-1-carboxylic acid (4-methyl-phenyl)-amide;

trans-4-[2-(4-Amino-cyclohexylamino)-9-cyclopentyl-9H-purin-6-ylamino]-piperidine-1-carboxylic acid pentylamide;

trans-4-[2-(4-Amino-cyclohexylamino)-9-cyclopentyl-9H-purin-6-ylamino]-piperidine-1-carboxylic acid hexylamide;

trans-4-[2-(4-Amino-cyclohexylamino)-9-cyclopentyl-9H-purin-6-ylamino]-piperidine-1-carboxylic acid (4-methylsulfanyl-phenyl)-amide;

trans-4-[2-(4-Amino-cyclohexylamino)-9-cyclopentyl-9H-purin-6-ylamino]-piperidine-1-carboxylic acid biphenyl-2-yl-amide;

trans-4-[2-(4-Amino-cyclohexylamino)-9-cyclopentyl-9H-purin-6-ylamino]-piperidine-1-carboxylic acid (4-acetyl-phenyl)-amide;

trans-4-[2-(4-Amino-cyclohexylamino)-9-cyclopentyl-9H-purin-6-ylamino]-piperidine-1-carboxylic acid (3-acetyl-phenyl)-amide;

trans-4-[2-(4-Amino-cyclohexylamino)-9-cyclopentyl-9H-purin-6-ylamino]-piperidine-1-carboxylic acid (4-isopropyl-phenyl)-amide;

trans-4-[2-(4-Amino-cyclohexylamino)-9-cyclopentyl-9H-purin-6-ylamino]-piperidine-1-carboxylic acid (4-ethoxy-phenyl)-amide;

trans-4-[2-(4-Amino-cyclohexylamino)-9-cyclopentyl-9H-purin-6-ylamino]-piperidine-1-carboxylic acid tert-butyl-amide;

trans-2-[(1-{4-[2-(4-Amino-cyclohexylamino)-9-cyclopentyl-9H-purin-6-ylamino]-piperidin-1-yl}-methanoyl)-amino]-benzoic acid methyl ester;

trans-4-[2-(4-Amino-cyclohexylamino)-9-cyclopentyl-9H-purin-6-ylamino]-piperidine-1-carboxylic acid (3-cyano-phenyl)-amide;

trans-3-[(1-{4-[2-(4-Amino-cyclohexylamino)-9-cyclopentyl-9H-purin-6-ylamino]-piperidin-1-yl}-methanoyl)-amino]-benzoic acid ethyl ester;

trans-4-[2-(4-Amino-cyclohexylamino)-9-cyclopentyl-9H-purin-6-ylamino]-piperidine-1-carboxylic acid (2-chloro-6-methyl-phenyl)-amide;

trans-4-[2-(4-Amino-cyclohexylamino)-9-cyclopentyl-9H-purin-6-ylamino]-piperidine-1-carboxylic acid phenethyl-amide;

trans-4-[2-(4-Amino-cyclohexylamino)-9-cyclopentyl-9H-purin-6-ylamino]-piperidine-1-carboxylic acid (3,4,5-trimethoxy-phenyl)-amide;

trans-2-[(1-{4-[2-(4-Amino-cyclohexylamino)-9-cyclopentyl-9H-purin-6-ylamino]-piperidin-1-yl}-methanoyl)-amino]-benzoic acid ethyl ester;

trans-4-[2-(4-Amino-cyclohexylamino)-9-cyclopentyl-9H-purin-6-ylamino]-piperidine-1-carboxylic acid (2-fluoro-5-trifluoromethyl-phenyl)-amide;

trans-4-[2-(4-Amino-cyclohexylamino)-9-cyclopentyl-9H-purin-6-ylamino]-piperidine-1-carboxylic acid (2-fluoro-6-trifluoromethyl-phenyl)-amide;
trans-4-[2-(4-Amino-cyclohexylamino)-9-cyclopentyl-9H-purin-6-ylamino]-piperidine-1-carboxylic acid (4-fluoro-2-trifluoromethyl-phenyl)-amide;
trans-4-[2-(4-Amino-cyclohexylamino)-9-cyclopentyl-9H-purin-6-ylamino]-piperidine-1-carboxylic acid (4-fluoro-3-trifluoromethyl-phenyl)-amide;
trans-4-[2-(4-Amino-cyclohexylamino)-9-cyclopentyl-9H-purin-6-ylamino]-piperidine-1-carboxylic acid butylamide;
trans-4-[2-(4-Amino-cyclohexylamino)-9-cyclopentyl-9H-purin-6-ylamino]-piperidine-1-carboxylic acid cyclohexylamide;
trans-4-[2-(4-Amino-cyclohexylamino)-9-cyclopentyl-9H-purin-6-ylamino]-piperidine-1-carboxylic acid propylamide;
trans-4-[2-(4-Amino-cyclohexylamino)-9-cyclopentyl-9H-purin-6-ylamino]-piperidine-1-carboxylic acid (2-fluoro-phenyl)-amide;
trans-4-[2-(4-Amino-cyclohexylamino)-9-cyclopentyl-9H-purin-6-ylamino]-piperidine-1-carboxylic acid (2-methyl-phenyl)-amide;
trans-4-[2-(4-Amino-cyclohexylamino)-9-cyclopentyl-9H-purin-6-ylamino]-piperidine-1-carboxylic acid (3,4-dichloro-phenyl)-amide;
trans-4-[2-(4-Amino-cyclohexylamino)-9-cyclopentyl-9H-purin-6-ylamino]-piperidine-1-carboxylic acid (3-methyl-phenyl)-amide; or
trans-4-[2-(4-Amino-cyclohexylamino)-9-isopropyl-9H-purin-6-ylamino]-piperidine-1-carboxylic acid (4-trifluoromethoxy-phenyl)-amide; or
a pharmaceutically acceptable salt, optical isomer, solvate or hydrate thereof.

40. A compound according to claim 1 which is

trans-4-[2-(4-Amino-cyclohexylamino)-9-cyclopentyl-9H-purin-6-ylamino]-piperidine-1-carboxylic acid (4-fluoro-phenyl)-amide;
trans-4-[2-(4-Amino-cyclohexylamino)-9-cyclopentyl-9H-purin-6-ylamino]-piperidine-1-carboxylic acid (3-trifluoromethyl-phenyl)-amide;
trans-4-[2-(4-Amino-cyclohexylamino)-9-cyclopentyl-9H-purin-6-ylamino]-piperidine-1-carboxylic acid (2-methoxy-phenyl)-amide;
trans-4-[2-(4-Amino-cyclohexylamino)-9-cyclopentyl-9H-purin-6-ylamino]-piperidine-1-carboxylic acid (3-chloro-phenyl)-amide;

trans-4-[2-(4-Amino-cyclohexylamino)-9-cyclopentyl-9H-purin-6-ylamino]-piperidine-1-carboxylic acid (2-bromo-phenyl)-amide;
trans-4-[2-(4-Amino-cyclohexylamino)-9-cyclopentyl-9H-purin-6-ylamino]-piperidine-1-carboxylic acid (2-chloro-phenyl)-amide;
trans-4-[2-(4-Amino-cyclohexylamino)-9-cyclopentyl-9H-purin-6-ylamino]-piperidine-1-carboxylic acid (4-trifluoromethoxy-phenyl)-amide;
trans-4-[2-(4-Amino-cyclohexylamino)-9-cyclopentyl-9H-purin-6-ylamino]-piperidine-1-carboxylic acid (4-chloro-2-trifluoromethyl-phenyl)-amide;
trans-4-[2-(4-Amino-cyclohexylamino)-9-cyclopentyl-9H-purin-6-ylamino]-piperidine-1-carboxylic acid (4-chloro-3-trifluoromethyl-phenyl)-amide;
trans-4-[2-(4-Amino-cyclohexylamino)-9-cyclopentyl-9H-purin-6-ylamino]-piperidine-1-carboxylic acid (4-methyl-phenyl)-amide;
trans-4-[2-(4-Amino-cyclohexylamino)-9-cyclopentyl-9H-purin-6-ylamino]-piperidine-1-carboxylic acid (4-methylsulfanyl-phenyl)-amide;
trans-4-[2-(4-Amino-cyclohexylamino)-9-cyclopentyl-9H-purin-6-ylamino]-piperidine-1-carboxylic acid biphenyl-2-yl-amide;
trans-4-[2-(4-Amino-cyclohexylamino)-9-cyclopentyl-9H-purin-6-ylamino]-piperidine-1-carboxylic acid (4-isopropyl-phenyl)-amide;
trans-4-[2-(4-Amino-cyclohexylamino)-9-cyclopentyl-9H-purin-6-ylamino]-piperidine-1-carboxylic acid (4-ethoxy-phenyl)-amide;
trans-4-[2-(4-Amino-cyclohexylamino)-9-cyclopentyl-9H-purin-6-ylamino]-piperidine-1-carboxylic acid (2-fluoro-5-trifluoromethyl-phenyl)-amide;
trans-4-[2-(4-Amino-cyclohexylamino)-9-cyclopentyl-9H-purin-6-ylamino]-piperidine-1-carboxylic acid (4-fluoro-2-trifluoromethyl-phenyl)-amide; or
trans-4-[2-(4-Amino-cyclohexylamino)-9-cyclopentyl-9H-purin-6-ylamino]-piperidine-1-carboxylic acid (4-fluoro-3-trifluoromethyl-phenyl)-amide; or
a pharmaceutically acceptable salt, optical isomer, solvate or hydrate thereof.

41. A compound according to claim 1 which is:

trans-4-[2-(4-Amino-cyclohexylamino)-9-cyclopentyl-9H-purin-6-ylamino]-piperidine-1-carboxylic acid butyl ester;
trans-4-[2-(4-Amino-cyclohexylamino)-9-cyclopentyl-9H-purin-6-ylamino]-piperidine-1-carboxylic acid ethyl ester;

trans-4-[2-(4-Amino-cyclohexylamino)-9-cyclopentyl-9H-purin-6-ylamino]-piperidine-1-carboxylic acid 4-nitro-benzyl ester;

trans-4-[2-(4-Amino-cyclohexylamino)-9-cyclopentyl-9H-purin-6-ylamino]-piperidine-1-carboxylic acid allyl ester;

trans-4-[2-(4-Amino-cyclohexylamino)-9-cyclopentyl-9H-purin-6-ylamino]-piperidine-1-carboxylic acid 2-nitro-phenyl ester;

trans-4-[2-(4-Amino-cyclohexylamino)-9-cyclopentyl-9H-purin-6-ylamino]-piperidine-1-carboxylic acid 4,5-dimethoxy-2-nitro-benzyl ester;

trans-4-[2-(4-Amino-cyclohexylamino)-9-cyclopentyl-9H-purin-6-ylamino]-piperidine-1-carboxylic acid prop-2-ynyl ester; or

trans-4-[2-(4-Amino-cyclohexylamino)-9-cyclopentyl-9H-purin-6-ylamino]-piperidine-1-carboxylic acid 4-methoxycarbonyl-phenyl ester; or

a pharmaceutically acceptable salt, optical isomer, solvate or hydrate thereof.

42. A compound according to claim 1 which is

trans-1-{4-[2-(4-Amino-cyclohexylamino)-9-cyclopentyl-9H-purin-6-ylamino]-piperidin-1-yl}-2-phenoxy-ethanone;

trans-1-{4-[2-(4-Amino-cyclohexylamino)-9-cyclopentyl-9H-purin-6-ylamino]-piperidin-1-yl}-2-phenylsulfanyl-ethanone;

trans-1-{4-[2-(4-Amino-cyclohexylamino)-9-cyclopentyl-9H-purin-6-ylamino]-piperidin-1-yl}-2-(4-chloro-phenoxy)-ethanone;

trans-1-{4-[2-(4-Amino-cyclohexylamino)-9-cyclopentyl-9H-purin-6-ylamino]-piperidin-1-yl}-2-benzyloxy-ethanone;

trans-1-{4-[2-(4-Amino-cyclohexylamino)-9-cyclopentyl-9H-purin-6-ylamino]-piperidin-1-yl}-2-phenyl-butan-1-one;

trans-(E)-1-{4-[2-(4-Amino-cyclohexylamino)-9-cyclopentyl-9H-purin-6-ylamino]-piperidin-1-yl}-3-(3-trifluoromethyl-phenyl)-propenone; or

trans-1-{4-[2-(4-Amino-cyclohexylamino)-9-cyclopentyl-9H-purin-6-ylamino]-piperidin-1-yl}-1-cyclobutyl-methanone; or

a pharmaceutically acceptable salt, optical isomer, solvate or hydrate thereof.

43. A compound according to claim 42 which is

trans-1-{4-[2-(4-Amino-cyclohexylamino)-9-cyclopentyl-9H-purin-6-ylamino]-piperidin-1-yl}-2-phenoxy-ethanone;

trans-1-{4-[2-(4-Amino-cyclohexylamino)-9-cyclopentyl-9H-purin-6-ylamino]-piperidin-1-yl}-2-phenylsulfanyl-ethanone;

trans-1-{4-[2-(4-Amino-cyclohexylamino)-9-cyclopentyl-9H-purin-6-ylamino]-piperidin-1-yl}-2-(4-chloro-phenoxy)-ethanone; or

trans-1-{4-[2-(4-Amino-cyclohexylamino)-9-cyclopentyl-9H-purin-6-ylamino]-piperidin-1-yl}-2-benzyloxy-ethanone; or

a pharmaceutically acceptable salt, optical isomer, solvate or hydrate thereof.

44. A compound according to claim 41 which is

trans-4-[2-(4-Amino-cyclohexylamino)-9-cyclopentyl-9H-purin-6-ylamino]-piperidine-1-carboxylic acid 4-methoxycarbonyl-phenyl ester; or

trans-4-[2-(4-Amino-cyclohexylamino)-9-cyclopentyl-9H-purin-6-ylamino]-piperidine-1-carboxylic acid 2-nitro-phenyl ester; or

a pharmaceutically acceptable salt, optical isomer, solvate or hydrate thereof.